IONOSPHERIC DATA

ISSUED

JANUARY, 1945

PREPARED BY INTERSERVICE RADIO PROPAGATION LABORATORY
National Bureau of Standards
Washington, D.C.

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IRPL-F5

INTERSERVICE RADIO PROPAGATION LABORATORY
NATIONAL BUREAU OF STANDARDS
WASHINGTON, D.C.

Issued
20 Jan. 1945

Organized under Joint U.S. Communications Board

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Note.- This IRPL-F series report, issued monthly, serves as one of two current supplements to IRPL Radio Propagation Handbook, Part 1, (War Dept. TM11-499, Navy Dept. DNC-13-1). The supplements of the IRPL-D series, "Basic Radio Propagation Predictions Three Months in Advance," issued earlier in the month, include basic prediction charts, auxiliary charts and nomograms, as well as examples illustrative of their use.

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Provisional Data (continued)

Final Data

Final Data (continued)

TERMINOLOGY

Note.- The following symbols are used, conforming to the recommendations of the International Radio Propagation Conference held in Washington, D.C., 17 April to 5 May 1944.

$f^{o}F2$ - ordinary-wave critical frequency for the F2 layer. The term night F layer will no longer be used. The term F2 layer is now used for the night F layer as well as the daytime F2 layer.

$f^{o}F1$ - ordinary-wave critical frequency of the F1 layer.

$f^{o}E$ - ordinary-wave critical frequency of the E layer.

h'F2 - minimum virtual height of the F2 layer.

h'F1 - minimum virtual height of the F1 layer.

h'E - minimum virtual height of the E layer.

fEs - highest frequency of Es reflections.

M - maximum usable frequency factor, to be followed by the distance in km. Example: M3500 represents 3500-km maximum usable frequency factor.

muf - maximum usable frequency.

[ ] - interpolated value.

( ) - doubtful value.

A - characteristic not measurable because of blanketing by sporadic E.

B - characteristic not measurable because of loss of trace due to absorption.

C - characteristic not measurable because of equipment failure or interference.

D - characteristic higher than upper limit of recorder.

E - characteristic less than lower limit of recorder.

F - spread echoes.

G - $f^{o}F2 \leqslant f^{o}F1$.

H - stratification observed within region.

J - ordinary-wave critical frequency deduced from measured extraordinary-wave critical frequency.

K - ionosphere storm in progress.

MONTHLY AVERAGES AND MEDIAN VALUES OF IONOSPHERIC DATA

The tables and graphs of ionospheric data presented here are assembled by the Interservice Radio Propagation Laboratory for analysis and correlation principally incidental to IRPL predictions of radio propagation conditions. These data are furnished by the following:

Carnegie Institution of Washington (Department of Terrestrial Magnetism)
- Baffin I., Canada
- Christmas I.
- Fairbanks, Alaska (University of Alaska, College, Alaska)
- Reykjavik, Iceland
- Maui, Hawaii
- Trinidad, Brit. West Indies
- Huancayo, Peru
- Watheroo, W. Australia

British National Physical Laboratory, and Inter-Services Ionosphere Bureau
- Radio Research Station, Slough, England
- Great Baddow, England
- Burghead, Scotland
- Delhi, India
- Madras, India
- Simonstown, Union of S. Africa

Australian Council for Scientific and Industrial Research
- Radio Research Board, Australia
- Brisbane, Q., Australia
- Mt. Stromlo, Canberra, NSW, Australia

Canadian Department of National Defence, Naval Service
- Churchill, Canada
- Ottawa, Canada

New Zealand Radio Research Committee
Karmadec Is.
Christchurch (Canterbury University College Observatory)
Campbell Is.
Pitcairn I.

Peoples' Commissar for Postal and Electric Communications, Moscow, U.S.S.R.
Tomsk, U.S.S.R.
Sverdlovsk, U.S.S.R.

National Bureau of Standards, Washington, D.C.
Stanford University, (San Francisco), California
Louisiana State University, Baton Rouge, Louisiana
University of Puerto Rico, San Juan, P.R.

For their timely value, some of the tables presented are provisional data received by telephone or telegraph in which there may be small or infrequent errors. When final values are available such errors will be corrected in later issues of this report.

The final values presented, both in tabular and graphical form, although correct for the quantities stated, as reported to this laboratory, may sometimes lead to an erroneous conception of typical values for the quantity under consideration. Standard scaling practice, following recommendations of the International Radio Propagation Conference held in Washington, D.C., 17 April to 5 May, 1944, is not yet universal, deviation from standard practice being most common in the cases of records where spread echoes are present. Even when standard scaling practice is used, intrinsically misleading results may arise from the monthly average being determined from only a few observations during the month. Two frequent types of such error, both particularly typical of stations in far northern or far southern latitudes are:

(a) Erroneously high values of monthly average critical frequencies caused by the frequent absence of record for cases where the critical frequency is below the lower frequency limit of the recorder. A median, rather than a mean, value of the critical frequency is more significant in such cases, the median being that for all times at which observations were made, the cases of such inability to read the records being counted as less than the lower frequency limit of the apparatus.

(b) Erroneously high values of monthly average F2-layer critical frequencies caused by the frequent occurrence of cases where the F1-layer critical frequency exceeds that of the F2-layer. This is characteristic of summer months during sunspot-cycle minimum, particularly in northern latitudes. In this case, also, median values are more significant than mean values, the median being that for all cases where observations are made, those cases where missing values result because of higher $f^{o}F1$ being counted as less than the $f^{o}F1$. When, as is often the case, no great discrepancy is likely to exist between $f^{o}F1$ and $f^{o}F2$, a typical value of $f^{o}F2$ may be obtained by taking the monthly average of observed $f^{o}F2$ together with observed $f^{o}F1$ for the cases where no $f^{o}F2$ could be measured.

The discrepancy between predicted and observed values of monthly average critical frequencies, particularly for far northern stations, is frequently because of the above reasons, the predictions being intended to represent typical values for the location under consideration.

It may be noted by inspection of the figures presenting comparison of data received for the months of August, September, October, November, and December with IRPL predictions made four months in advance, that, generally, the predictions have been in error by being too low, especially in temperate latitudes. (Revised predictions, one month in advance, for November and December, as presented in the reports IRPL-E2 and IRPL-E3 give fairly good agreement with observation).

These predictions are based on average trends of solar activity as measured by sunspot number. In the past few months this activity has been somewhat abnormally high. Occurrence of both sunspots and calcium flocculi during the past few months has been slightly more frequent at high than at low solar latitudes, indicating that perhaps the sunspot minimum has just been passed.

IONOSPHERIC DATA FOR EVERY DAY AND HOUR

These data, observed at Washington, D.C., follow the scaling practices recommended by the International Radio Propagation Conference held in Washington, D.C., 17 April to 5 May 1944. (Cf. IRPL-C61, pp.36-39).

Because of the high variability of observed fEs, mean values are of little practical significance and are not given here.

Mean values of other quantities are given for all days of the month as well as for quiet days only. The criteria for selecting periods of ionospheric storminess, whose data are deleted in obtaining the mean values for quiet days only, are presented in IRPL-R5, "Criteria for Ionospheric Storminess", available to authorized persons upon request to the Chief of IRPL, National Bureau of Standards, Washington 25, D.C.

In determining the median values included in Tables 46 through 58, the following procedure has been adopted:

For all characteristics: Where the value is missing because of A, B, or C (see Terminology, above), that hour is omitted from the median count.

In addition,

For critical frequencies:
For all layers, where a value is missing because of E (see Terminology, above), it is counted as less than the lower limit of the recorder.

For virtual heights:

Values missing for any reason are omitted from the median count.

For muf factors:

Values missing for any reason are omitted from the median count.

IONOSPHERE DISTURBANCES

Table 59 presents ionospheric character figures observed at Washington, D.C., during December 1944, as determined by the criteria presented in IRPL-R5, cited above, together with American magnetic K-figures which are usually covariant with them.

Unusually high solar activity prevailed during the month of December, with consequent prevalence of ionospherically disturbed conditions. Most notable was the appearance of the greatest sunspot group observed within the last three years, whose meridian passage was associated with the great ionosphere storm which began on 16 December, the severest since 18 September 1941.

Table 60 presents sudden ionospheric disturbances, as observed at Washington, D.C., during December, 1944. These also were associated with the increased solar activity noted above, and have been the only pronounced occurrences of sudden ionosphere disturbance since February, 1942.

ERRATA

1. In the previous issue of the report, IRPL-F4, the labeling "h'F2" at the bottom of Table 27 is incorrect; this quantity should be "$f^{o}F2$."

2. Because of errors in computing, previously reported final data from the Kermadec Is. for July, August, September, and October, 1944 (previously reported, respectively, in IRPL-F1, Table 23, IRPL-F2, Table 30, IRPL-F3, p.2, and IRPL-F3, Table 21) are, in some cases incorrect. Revisions to previously reported values are given in Tables 44, 41, 37, and 33 of this report.

Table 1

Baffin I., Canada (70.5°N, 68.6°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	292	2.25						3.9
01		2.11						
02	303	2.10						4.0
03		1.98						
04	302	2.09						3.9
05	280	2.33						3.9
06	313	2.37						3.8
07	284	2.25						3.7
08	282	2.72						3.3
09	260	3.04						3.2
10	252	3.18						3.2
11	256	3.87						3.1
12	251	3.78						3.0
13	244	3.90						3.0
14	249	3.63						3.1
15	253	3.65						3.1
16	246	3.28						3.4
17	257	3.38						3.2
18	255	3.29						3.3
19	268	2.88						3.3
20	261	3.04						3.1
21	245	2.41						4.1
22	287	2.31						3.8
23	248	2.10						4.1

Time: 75°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 2

Fairbanks, Alaska (64.9°N, 147.9°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	306	1.63						3.1
01	332	1.70						3.0
02	384	1.70						2.9
03	368	1.81			103	1.40		2.9
04	353	2.04						2.9
05	338	2.08			103	1.23		3.0
06	312	1.86			103	1.18		3.0
07	307	1.77			103	1.25		3.0
08	279	1.96			103	1.44		3.1
09	253	3.05			103	1.49		3.2
10	239	4.01			103	1.56		3.4
11	236	4.57			103	1.64		3.4
12	229	4.93			103	1.66		3.4
13	229	5.11			103	1.59		3.4
14	227	4.77			103	1.29		3.4
15	234	4.06			103	1.02		3.3
16	235	3.23			103	1.05		3.3
17	243	2.37			103	1.00		3.3
18	267	1.80						3.3
19	290	1.52						3.3
20	314	1.45						3.2
21	299	1.38						3.2
22	304	1.42						3.2
23	308	1.44						3.2

Time: 150°W.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 3

Reykjavik, Iceland (64.1°N, 21.7°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	350	3.30						3.1
01								
02	330	2.90						3.2
03	(333)	(3.70)	(350)	(3.50)				(2.9)
04	285	2.85						3.0
05	300	2.78						3.3
06	260	2.33						3.6
07		1.78						3.5
08								
09	281	2.47						3.3
10	208	3.67	(280)	(3.40)				3.4
11	206	4.51						3.5
12	209	5.04						3.6
13	211	5.02						3.5
14	211	4.85						3.5
15	224	4.07						3.3
16	218	3.94						3.2
17	225	3.67						2.7
18	270	2.90						3.2
19								
20								
21								
22								
23	290	3.10						2.9

Time: 15°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 4

Churchill, Canada (58.8°N, 94.2°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02		3.3						3.2
03		3.2						2.9
04		3.5						2.9
05								
06								
07								
08								
09		4.1						3.3
10		4.7						3.3
11		5.3						3.3
12		6.0						3.3
13		6.4						3.3
14		6.5						3.3
15		6.0						3.2
16		5.6						3.2
17		4.5						3.0
18		3.7						3.0
19		3.4						2.9
20		3.5						3.0
21								
22								
23								

Time: 90°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 5

Great Baddow, England (51.7°N, 0.5°E) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.8						2.8
01		2.7						2.8
02		2.7						2.8
03		2.4						2.8
04		2.3						2.9
05		2.1						3.0
06		2.0						3.1
07		2.0						3.0
08		3.8						3.5
09		5.2						3.6
10		5.7						3.6
11		6.0						3.6
12		6.4						3.6
13		6.3						3.6
14		5.9						3.5
15		5.7						3.6
16		5.0						3.5
17		4.0						3.2
18		3.2						3.2
19		2.6						3.0
20		2.6						2.9
21		2.6						2.9
22		2.6						2.8
23		2.8						2.9

Time: 0°
Length of time sweep: Manual operation.

Table 6

Ottawa, Canada (45.5°N, 75.8°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.6						2.9
01		2.6						2.9
02		2.6						2.9
03		2.6						2.9
04		2.5						3.0
05		2.7						3.1
06		2.6						3.1
07		3.6						3.1
08		5.2						3.4
09		6.0						3.4
10		6.7						3.3
11		7.2						3.4
12		7.2						3.3
13		7.4						3.4
14		7.0						3.4
15		6.6						3.3
16		6.2						3.3
17		5.3						3.2
18		4.3						3.2
19		3.6						3.1
20		3.0						3.0
21		2.9						3.0
22		2.8						3.0
23		2.6						2.9

Time: 75°W.
Length of time sweep: 1.93 Mc to 13.5 Mc. Manual operation.

Table 7

Maui, Hawaii (20.8°N, 156.5°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	3.75						3.2
01	252	4.05						3.1
02	232	3.51						3.9
03	236	3.81						3.4
04	235	4.27						3.0
05	255	3.77						3.5
06	272	3.02						3.0
07	244	4.19			115	2.30		3.2
08	237	6.39	222		122	2.48		3.4
09	267	8.07	219	4.33	114	2.75		3.3
10	265	9.36	211	4.50	111	3.03		3.3
11	261	9.04	202	4.59	112	3.22		3.2
12	275	9.25	203	4.63	112	3.24		3.1
13	270	10.20	206	4.59	112	3.26		3.2
14	259	10.09	212	4.57	109	3.10		3.2
15	244	9.71	208	4.29	109	3.00		3.4
16	234	7.98	214	3.70	111	2.60		3.5
17	216	6.93			120	2.60		3.6
18	204	5.17						3.6
19	223	3.80						3.5
20	248	3.70						3.3
21	241	3.85						3.3
22	241	3.55						3.2
23	268	3.35						3.2

Time: 150°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 8

Trinidad, Brit. West Indies (10.6°N, 61.3°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	246	4.06						3.3
01	238	3.57						3.4
02	257	3.28						3.3
03	293	2.98						3.1
04	317	2.94						3.0
05	290	3.09						3.2
06	257	3.64						3.1
07	246	5.50			100	2.03		3.4
08	270	6.98	245	4.05	103	2.59		3.3
09	269	8.19	231	4.32	104	2.95		3.4
10	271	8.04	223	4.49	104	3.22		3.4
11	278	7.73	218	4.57	106	3.32		3.3
12	290	7.37	223	4.59	105	3.34		3.2
13	307	7.63	224	4.64	104	3.36		3.1
14	289	7.85	244	4.50	102	3.27		3.2
15	282	7.39	235	4.34	104	3.06		3.2
16	260	7.07	237	3.91	104	2.75		3.2
17	253	6.85			101	2.29		3.3
18	242	5.71						3.3
19	244	4.68						3.3
20	258	3.97						3.2
21	299	3.69						2.9
22	276	3.48						3.1
23	256	4.19						3.1

Time: 60°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 9

Christmas I. (2.0°N, 157.0°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	244	5.18						3.3
01	243	3.90						3.2
02	300	3.35						3.0
03	280	2.60						3.2
04								
05								
06	289	4.67						3.3
07	239	6.12			115	2.50		3.1
08	232	7.31	220	4.40				2.9
09	311	7.71	214	4.63	115	3.45		2.8
10	337	7.79	212	4.63	110			2.6
11	353	7.74	210	4.77				2.6
12	346	7.98	206	4.81	115	3.60		2.7
13	336	8.44	200	4.75	117	3.65		2.7
14	331	9.00	201	4.67	118	3.40		2.8
15	316	9.44	197	4.70	118	3.34		2.9
16	298	9.67	212	4.41	118	2.97		3.0
17	243	9.54			110	2.65		3.1
18	245	9.48			105	2.40		3.1
19	243	8.97						3.2
20	244	7.97						3.1
21	248	7.21						3.2
22	252	6.83						3.3
23	245	5.85						3.3

Time: 150°W.
Length of time sweep: Manual operation.

Table 10

Huancayo, Peru (12.0°S, 75.3°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.7						2.9
01		3.3						2.9
02		2.9						3.2
03		2.7						3.3
04		2.7						3.2
05		2.4						3.0
06		5.6						3.2
07		7.3						3.2
08		8.4						3.0
09		8.6						2.8
10		8.5						2.6
11		8.2						2.6
12		8.4						2.6
13		8.6						2.6
14		8.9						2.6
15		9.2						2.8
16		9.2						2.8
17		9.2						2.8
18		9.1						2.9
19		8.6						2.9
20		7.9						2.8
21		6.8						2.8
22		5.9						2.7
23		4.6						2.7

Time: 75°W.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 11

Brisbane, Q., Australia (27.5°S, 153.0°E) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		6.4						3.4
01		5.9						3.2
02		5.4						3.2
03		4.7						3.2
04		4.2						3.2
05		4.4						3.4
06		5.2						3.5
07		5.6						3.4
08		6.0						3.3
09		6.5						3.2
10		6.9						3.1
11		7.3						3.0
12		7.9						3.0
13		8.0						3.0
14		8.2						3.1
15		8.2						3.2
16		8.0						3.2
17		7.4						3.2
18		7.0						3.2
19		6.6						3.0
20		6.6						3.0
21		6.6						3.0
22		6.5						3.0
23		6.5						3.0

Time: 150°E.
Length of time sweep: 2.2 Mc to 12.5 Mc in two minutes, thirty seconds.

Table 12

Kermadec Is. (29.2°S, 177.9°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	303	6.39						
01	296	6.31						
02	308	5.73						
03	314	5.12						
04	317	4.71						
05	300	4.67						
06	323	5.42	281	3.60	137	2.07		
07	336	6.19	277	4.01	129	2.69		
08	342	6.34	288	4.33	125	2.99		
09	331	7.29	258	4.43	123	3.20		
10	344	7.55	258	4.68	124	3.33		
11	368	7.75	292	4.69	123	3.36		
12	374	7.71	268	4.71	142	3.38		
13	359	7.43	283	4.62	122	3.36		
14	327	7.52	275	4.58	122	3.33		
15	359	7.39	279	4.47	124	3.23		
16	350	8.02	271	4.30	126	3.07		
17	335	7.97	384	4.00	128	2.69		
18	317	7.15	386	3.37	137	2.06		
19	293	7.31						
20	310	7.19						
21	324	7.05						
22	338	6.99						
23	318	7.14						

Time: Local
Length of time sweep: 1.0 Mc to 12.8 Mc. Manual operation.

Table 13

Mt. Stromlo, N.S.W., Australia (35.3°S, 149.0°E) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.4						2.9
01		4.9						3.0
02		4.5						2.9
03		3.8						3.0
04		3.4						3.0
05		3.7						3.1
06		4.4						3.1
07		5.1						3.0
08		5.4						2.9
09		5.7						2.8
10		6.1						2.9
11		6.3						2.9
12		6.5						2.9
13		6.4						2.9
14		6.5						2.9
15		6.6						3.0
16		6.6						3.0
17		6.3						3.0
18		6.2						3.0
19		6.1						3.0
20		6.0						3.0
21		5.8						2.9
22		5.7						2.9
23		5.6						2.9

Time: 150°E
Length of time sweep: 1.6 Mc to 12.5 Mc in two minutes.

Table 14

Christchurch, N.Z. (43.5°S, 172.6°E) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	256	5.39						
01	249	4.83						
02	237	4.35						
03	249	3.82						
04	256	3.68						
05	257	4.25			102	1.94		
06	295	4.70	236	3.80	99	2.42		
07	299	5.18	235	4.04	98	2.78		
08	312	5.59	224	4.34	98	3.01		
09	318	5.96	228	4.48	98	3.21		
10	321	6.13	218	4.56	98	3.27		
11	320	6.22	213	4.61	97	3.33		
12	323	6.32	219	4.61	99	3.31		
13	334	6.04	220	4.65	97	3.30		
14	342	6.02	229	4.52	99	3.18		
15	326	6.25	224	4.40	99	3.19		
16	312	6.31	235	4.23	100	2.97		
17	295	6.58	232	3.97	101	2.69		
18	283	6.65	242	3.54	104	2.34		
19	259	6.75			118	1.77		
20	247	6.67						
21	254	6.60						
22	264	6.22						
23	265	5.84						

Time: 172.5°E
Length of time sweep: 2.5 Mc to 12 Mc in two minutes.

Table 15

Great Baddow, England (51.7°N, 0.5°E) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.9						2.9
01		3.1						2.9
02		3.1						2.9
03		2.7						2.9
04		2.4						3.0
05		2.2						3.1
06		2.2						3.2
07		3.2						3.4
08		4.9						3.7
09		5.7						3.7
10		6.1						3.7
11		6.5						3.6
12		6.3						3.7
13		6.0						3.7
14		6.0						3.6
15		5.8						3.6
16		5.3						3.6
17		4.3						3.4
18		3.7						3.4
19		3.1						3.2
20		2.7						3.1
21		2.6						2.9
22		2.9						2.9
23		2.9						2.9

Time: 0°
Length of time sweep: Manual operation.

Table 16

Watheroo, Western Australia (30.3°S, 115.9°E) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.4						3.0
01		4.2						3.0
02		3.7						3.1
03		3.3						3.1
04		3.1						3.1
05		3.8						3.3
06		4.8						3.3
07		5.3						3.2
08		5.6						3.1
09		6.0						3.1
10		6.5						3.0
11		7.1						3.0
12		7.6						3.0
13		8.1						3.0
14		8.2						3.0
15		8.0						3.1
16		7.6						3.2
17		7.1						3.2
18		6.6						3.2
19		6.1						3.1
20		5.5						3.0
21		5.0						3.0
22		4.7						2.9
23		4.5						2.9

Time: 120°E.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 17

Washington, D.C. (39.0°N, 77.5°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	2.20					3.8	3.0
01	274	2.21					3.6	3.0
02	268	2.45					3.4	3.0
03	251	2.75					3.8	3.1
04	245	2.83					4.0	3.0
05	244	2.81					4.3	3.2
06	254	2.57					4.6	3.2
07	251	2.90					4.0	3.2
08	228	4.98			123	1.92	4.0	3.4
09	236	5.79	232		117	2.38	4.1	3.4
10	247	6.42	225	3.65	116	2.68	4.0	3.3
11	256	6.95	226	3.87	116	2.83	4.0	3.3
12	255	7.12	221	3.92	107	2.91	4.2	3.3
13	252	7.03	226	3.87	116	2.82	4.0	3.3
14	249	6.69	227	3.68	116	2.65	4.0	3.3
15	242	6.67	224		118	2.42	3.8	3.4
16	228	6.16			118	1.97	3.6	3.4
17	221	5.50					3.6	3.4
18	234	4.25					4.0	3.2
19	237	3.47					3.1	3.2
20	247	2.75					3.3	3.2
21	272	2.34					3.7	3.0
22	277	2.20					3.9	3.0
23	289	2.07					3.8	3.0

Time: 75°W
Length of time sweep: 0.8 Mc to 14.0 Mc in two minutes.

Table 18

San Francisco, Calif. (37.4°N, 122.2°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	257	3.13					3.0	3.2
01	260	2.96					2.8	3.1
02	258	3.10					2.8	3.2
03	258	3.13					2.4	3.1
04	254	3.06						3.2
05	261	3.00						3.1
06	264	2.89						3.1
07	242	3.59						3.2
08	244	5.52	250	2.57	115	1.96	2.7	3.5
09	245	6.15	224	3.40	113	2.39	3.2	3.5
10	252	6.57	229	3.87	110	2.76	3.7	3.4
11	263	7.71	230	4.02	109	2.93	3.8	3.5
12	260	7.37	226	4.05	109	3.00		3.5
13	254	7.36	229	3.97	107	2.94		3.4
14	251	7.06	230	3.79	109	2.77		3.4
15	248	6.55	230	3.48	108	2.48	3.3	3.4
16	239	6.18			109	2.04	2.4	3.4
17	223	4.83					2.3	3.5
18	235	3.52					2.8	3.3
19	240	2.98					3.0	3.3
20	246	2.50					2.7	3.3
21	249	2.51					2.7	3.3
22	260	2.82					2.8	3.1
23	274	2.97					2.5	3.0

Time: 120°W
Length of time sweep: 0.3 Mc to 12 Mc in six minutes. Record centered on the hour.

Table 19

Baton Rouge, Louisiana (30.5°N, 91.2°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	282	3.58						3.0
01	282	3.70						3.1
02	274	3.80						3.2
03	265	3.71						3.2
04	276	3.50						3.1
05	285	3.25						3.0
06	286	3.26						3.0
07	252	4.82						3.3
08	252	6.17			136	2.14		3.4
09	278	6.53	248	3.90	127	2.60		3.3
10	295	6.94	246	4.24	120	2.89		3.2
11	280	7.62	241	4.39	120	3.01		3.2
12	292	7.71	244	4.38	120	3.10		3.1
13	288	7.55	242	4.36	120	3.10		3.1
14	273	7.50	248	4.23	119	2.96		3.2
15	269	7.37	240	3.75	126	2.64		3.2
16	247	6.31			134	2.19	3.1	3.2
17	234	5.45					3.5	3.2
18	237	4.25					3.6	3.4
19	264	3.56					3.6	3.2
20	282	3.14					3.2	3.1
21	295	3.03					3.3	3.0
22	290	3.21						3.0
23	284	3.49						3.0

Time: 90°W
Length of time sweep: 1.9 Mc to 9.8 Mc in three minutes, thirty seconds. Record centered on the hour.

Table 20

San Juan, Puerto Rico (18.4°N, 66.1°W) December, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.16						3.0
01		4.24						3.2
02		4.15						3.1
03		3.99						3.2
04		3.26						2.9
05		3.20						2.9
06		3.22						2.9
07	270	4.70						3.2
08	268	6.47		2.98				3.3
09	268	7.47	254	4.05		2.97		3.3
10	270	7.48	24[illegible]	4.28		3.05		3.3
11	281	7.46	[illegible]	4.36		3.13		3.2
12	289	7.42	217	4.45		3.18		3.1
13	285	7.29	224	4.42		3.22		3.1
14	284	7.11	228	4.36		3.10		3.2
15	289	6.98	244	4.14		2.98		3.2
16	272	7.06	246	3.64				3.1
17	258	6.58		2.87				3.3
18	247	5.73						3.3
19	262	4.63						3.2
20		4.01						3.1
21		4.00						3.0
22		4.05						2.9
23		4.06						3.0

Time: 60°W
Length of time sweep: 2.8 Mc to 11 Mc in twelve minutes.

Table 21

(Corrections and additions to previously issued provisional data)

Fairbanks, Alaska (64.9°N, 147.8°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							3.0	3.0
01							3.2	3.0
02							3.2	3.0
03							3.3	2.9
04							3.1	3.0
05					-	-	3.0	3.0
06					-	-	2.9	3.1
07					-	-	2.7	3.1
08						1.30	2.4	3.2
09							2.7	3.4
10							2.8	3.3
11				-			2.7	3.4
12	222						2.4	3.5
13							2.5	3.5
14							2.7	3.5
15							2.4	3.4
16							2.4	3.3
17					-	-	2.7	3.4
18							2.8	3.3
19							2.8	3.4
20							2.9	3.2
21							2.8	3.2
22							3.0	3.2
23							3.0	3.2

Time: 150°W.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 22

(Corrections and additions to previously issued provisional data)

Churchill, Canada (58.8°N, 94.2°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							3.9	
01	273						3.0	
02	277						4.0	
03	322						3.3	
04	288	3.7			118	3.0	3.3	
05	331	3.6			121	3.1	3.6	
06	303				124	2.9	4.0	
07	338	3.0					4.0	3.0
08	273				110	2.8	3.2	
09	245				117	2.8	2.9	
10	250				118	2.8		
11	262		230	3.2	128	2.6		3.3
12	258		234	3.3	123	2.7		3.3
13	251		226	3.2	126	2.6		
14	243		225	3.0	134	2.3		
15	230				125	2.8		
16	233				113	2.8		
17	236				119	2.8		
18	256				122			
19	292				121	2.8	3.2	
20	285				126	3.0	3.3	
21	282				123	2.8	4.1	
22	294						6.0	
23	256						5.6	

Time: 90°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 23

(Corrections and additions to previously issued provisional data)

Maui, Hawaii (20.8°N, 156.5°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								3.1
01								3.3
02								
03								3.5
04								-
05								-
06								3.1
07					125	2.32		3.4
08					114	2.45		
09					110	2.77		
10					110	2.99		
11					110	3.16		
12					109	3.28		
13					108	3.24		
14					109	3.11		
15					105	2.96		
16					108	2.63	3.4	
17					-	-	3.5	3.3
18					-	-	3.5	
19							3.2	
20							3.0	3.0
21							3.1	3.1
22								
23								3.0

Time: 150°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 24

(Corrections and additions to previously issued provisional data)

Trinidad, Brit. West Indies (10.6°N, 61.3°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07								
08								
09								
10						3.25		
11								
12								
13								
14	276							
15							3.4	3.2
16							3.2	
17			-		-		2.5	
18						-		
19							3.1	
20		3.32					2.8	
21								
22								
23								

Time: 60°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 25

(Corrections and additions to previously issued provisional data)

Huancayo, Peru (12.0°S, 75.3°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	326	5.01						2.8
01	308	4.09						3.1
02	290	4.16						3.1
03	272	3.27						
04	266	2.78						
05	266	2.79						3.1
06	243	5.79				2.21	3.0	
07	239	7.50				2.78	3.4	
08	307	8.46	214	4.42		3.02	4.2	
09	325	8.85	212	4.56			5.5	
10	342	8.70	211	4.59			5.2	
11	349	8.69	206	4.65			4.8	
12	348	8.83	204	4.66			4.8	
13	345	9.07	202	4.61			4.6	
14	327	9.19	201	4.52			4.8	
15	312	9.20	202	4.35		3.11	5.0	
16	232	9.00				2.80	4.4	2.6
17	246	8.90				2.30	3.2	
18	254	8.77				1.27		
19	271	8.57						
20	283	8.32						2.8
21	300	7.72						2.8
22	325	6.82						
23	331	5.98						2.7

Time: 75°W.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 27

Kermadec Is. (29.2°S, 177.9°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
0010	286	6.70					4.6	
0100	271	6.61					3.8	
0200	256	5.72					3.0	
0310	267	4.42					3.2	
0400	282	4.10					2.8	
0500	273	4.21						
0600	270	5.53	250	3.37	129	2.14		
0700	294	6.23	247	3.99	121	2.55		
0800	304	6.84	252	4.27	117	2.92		
0900	297	7.49	235	4.45	116	3.10		
1000	320	7.82	247	4.64	115	3.23		
1100	321	8.11	246	4.64	114	3.30	5.2	
1200	319	8.21	244	4.59	115	3.30		
1300	318	8.16	246	4.63	115	3.31		
1400	306	8.05	240	4.48	116	3.26		
1500	301	7.68	256	4.32	116	3.13		
1600	302	7.54	264	4.19	118	2.81		
1700	290	7.48	259	3.70	124	2.47	4.6	
1800	273	7.62	263	2.86	133	1.96	4.5	
1850	258	7.59					4.8	
2000	272	7.11					5.0	
2100	287	6.81					5.0	
2200	296	6.62					3.8	
2300	307	6.65					4.5	

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

Table 26

Pitcairn I. (25.0°S, 130.0°W) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01	244	4.77						
02								
03								
04	260	4.38						
05								
06	257	7.76	212	4.28				
07								
08	304	8.79	206	4.55				
09								
10	303	10.00	218	4.70				
11								
12	290	10.07	228	4.60				
13								
14	269	8.57	236	4.30				
15								
16								
17								
18	278	6.07						
19								
20								
21	308	6.14						
22								
23								

Time: 150°W.

Table 28

(Corrections to previously issued provisional data)

Christchurch, N.Z. (43.6°S, 172.6°E) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	263							
01								
02	256							
03	246							
04	248							
05								
06								
07								
08	305					2.95		
09								
10								
11								
12								
13								
14	334							
15			214					
16								
17								
18								
19								
20	244							
21								
22								
23								

Time: 172.5°E.
Length of time sweep: 2.5 Mc to 12 Mc in two minutes.

Table 29

Campbell I. (52.0°S, 169.0°E) November, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	263	5.18						
01	263	4.73						
02	255	4.28						
03	246	3.83						
04	248	3.52						
05	244	4.10						
06	249	4.71	234	2.91	103	2.67		
07	312	5.31	235	4.00	100	2.74		
08	305	5.76	238	4.22	99	2.95		
09	331	6.12	226	4.37	99	3.09		
10	308	6.20	226	4.42	100	3.20		
11	304	6.28	202	4.49	100	3.20		
12	300	6.41	206	4.46	98	3.18		
13	322	6.20	211	4.50	101	3.20		
14	334	6.07	216	4.44				
15	322	6.24	214	4.32	100	3.07		
16	303	6.35	232	4.08	100	2.89		
17	288	6.46	240	3.76	102	2.61		
18	260	6.81	244	3.21	104	2.07		
19	250	7.04						
20	244	6.83						
21	246	6.20						
22	252	5.88						
23	246	5.54						

Time: 165°E.
Length of time sweep: 1 Mc to 12 Mc. Manual operation.

Table 30

Slough, England (51.5°N, 0.6°W) October, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.96						
01		2.95						
02		2.88						
03		2.70						
04		2.34						
05		2.15						
06		2.72						
07		4.48						
08		5.54						
09		5.85						
10		6.27						
11		6.42						
12		6.39						
13		6.31						
14		6.27						
15		6.16						
16		6.27						
17		6.09						
18		5.81						
19		5.02						
20		3.73						
21		3.20						
22		3.02						
23		3.00						

Time: 0°
Length of time sweep: 0.5 Mc to 16 Mc in four minutes.

Table 31

(Corrections and additions to previously issued provisional data).

Maui, Hawaii (20.8°N, 156.5°W) October, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								3.3
02								3.3
03								
04								3.4
05								3.2
06								3.0
07								
08								
09								
10								
11				4.81				
12								3.0
13							4.3	3.0
14					110		3.8	
15							3.7	
16							3.8	
17							4.2	3.4
18							4.2	
19							3.4	
20							3.0	2.9
21							2.4	2.9
22								
23								

Time: 150°W.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 32

Pitcairn I. (25.0°S, 130.0°W) October, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01	227	4.49						
02								
03								
04	289	3.60						
05								
06	245	7.87	214	3.99				
07								
08	273	8.76	209	4.63				
09								
10	272	9.56	202	4.64				
11								
12	286	8.90	211	4.59				
13								
14	270	8.13	230	4.25				
15								
16								
17								
18	262	5.10						
19								
20								
21	292	6.00						
22								
23								

Time: 150°W.

Table 33

(Corrections and additions to previously issued final data.

Kermadec Is. (29.2°S, 177.9°W) October, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
0010							3.1	
0100							2.8	
0200							2.5	
0310							2.1	
0400		3.55					1.9	
0500								
0600			240					
0700				3.81	117			
0800		7.39						
0900								
1000								
1100			216					
1200		7.96						
1300								
1400		7.66						
1500								
1600								
1700								
1800							2.7	
1850							3.0	
2000							3.2	
2100							3.85	
2200							3.5	
2300	280						3.5	

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

Table 34

Simonstown, Union of S. Africa (33.9°S, 18.7°E) October, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.37						2.9
01		3.39						2.9
02		3.42						2.9
03		3.43						2.9
04		3.28						3.0
05		3.39						3.0
06		3.87						3.1
07		5.21						3.2
08		6.05						3.2
09		6.66						3.1
10		7.08						3.0
11		7.20						2.9
12		7.83						2.9
13		8.20						2.9
14		8.58						2.9
15		8.60						3.0
16		8.44						3.0
17		7.96						3.1
18		7.73						3.1
19		6.74						3.2
20		4.92						3.1
21		3.84						3.0
22		3.62						3.0
23		3.45						3.0

Time: 15°E.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 35

Slough, England (51.5°N, 0.6°W) September, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.31						
01		3.23						
02		3.12						
03		3.01						
04		2.91						
05		2.88						
06		3.66						
07		4.47						
08		4.88						
09		5.08						
10		5.45						
11		5.45						
12		5.38						
13		5.28						
14		5.35						
15		5.37						
16		5.46						
17		5.59						
18		5.88						
19		6.08						
20		5.55						
21		4.70						
22		3.87						
23		3.44						

Time: 0°
Length of time sweep: 0.5 Mc to 16 Mc in four minutes.

Table 36

(Corrections and additions to previously issued provisional data)

Delhi, India (28.6°N, 77.2°E) September, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.38						
01		3.10						
02		3.08						
03		2.99						
04		2.82						
05		2.68						
06		4.15						
07		6.15						
08		6.67						
09		6.85						
10		7.28						
11		8.69						
12		9.51						
13		10.05						
14		10.35						
15		10.26						
16		9.61						
17		8.41						
18		7.56						
19		6.09						
20		5.21						
21		4.00						
22		3.79						
23		3.62						

Time: 75°E.

Table 37

(Corrections and additions to previously issued final data)

Kermadec Is. (29.2°S, 177.9°W) September, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
0015								
0100								
0200								
0300								
0400								
0500								
0600								
0700			245					
0800								
0900								
1000								
1100								
1200								
1300								
1400								
1500								
1600								
1700								
1800							2.1	
1850							2.4	
2000								
2100								
2200								
2300								

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

Table 38

(Corrections and additions to previously issued provisional data)

Watheroo, Western Australia (30.3°S, 115.9°E) September, 1944.

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							2.7	
01							2.8	
02							2.8	
03							2.8	
04							2.8	
05	240						2.8	3.0
06							2.8	
07							2.8	
08							2.9	
09							3.0	
10							3.0	
11							3.0	
12		6.77					3.7	3.2
13							3.3	
14							3.1	
15							3.0	
16							2.9	
17							2.9	
18							2.8	
19							2.8	
20							2.7	
21							2.6	
22							2.5	
23							2.7	

Time: 120°E.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 39

Simonstown, Union of S. Africa (33.9°S, 18.7°E) September, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								2.9
01								2.9
02								2.9
03								3.0
04								3.0
05								2.9
06								3.0
07								3.2
08								3.2
09								3.1
10								3.0
11								3.0
12								3.0
13								2.9
14								2.9
15								3.0
16								3.0
17								3.1
18								3.2
19								3.1
20								3.1
21								3.0
22								3.0
23								2.9

Time: 15°E.
Length of time sweep: 2 Mc to 16 Mc in one minute.

Table 40

Slough, England (51.5°N, 0.6°W) August, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	329	3.45						2.6
01	334	3.19						2.6
02	336	3.06						2.6
03	334	2.90						2.6
04	326	2.81						2.6
05	291	3.26						2.8
06	267	4.00						3.0
07	266	4.40						3.2
08	278	4.67						2.9
09	292	4.95						2.8
10	291	5.20						2.8
11	279	5.12						2.9
12	278	5.11						2.9
13	305	5.00						2.8
14	316	4.99						2.7
15	304	4.94						2.8
16	311	4.92						2.7
17	299	5.07						2.8
18	296	5.49						2.8
19	294	5.80						2.8
20	291	5.72						2.8
21	287	5.18						2.9
22	307	4.38						2.8
23	323	3.72						2.7

Time: 0°
Length of time sweep: 0.5 Mc to 16 Mc in four minutes.

Table 41

(Corrections and additions to previously issued final data)

Kermadec Is. (29.2°S, 177.9°W) August, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.49					3.3	
01								
02								
03							2.5	
04								
05		2.62					2.1	
06								
07			245	2.88		1.66		
08								
09								
10								
11								
12	292							
13			231					
14		5.82						
15							4.8	
16					115		3.8	
17	249		245	3.00			3.5	
18							3.2	
19							3.2	
20							2.8	
21							2.4	
22								
23								

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

Table 42

(Corrections and additions to previously issued provisional data).

Watheroo, Western Australia (30.3°S, 115.9°E) August, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							2.8	3.0
01							2.8	
02							2.8	
03							2.8	
04							2.8	
05	222						2.8	3.2
06							2.8	
07							2.8	
08							3.0	
09							3.2	
10				4.11			3.0	
11							3.1	
12							3.3	
13							3.4	
14				4.11			3.6	
15							3.3	3.4
16							3.4	
17							3.0	
18							2.8	3.3
19							2.3	
20							2.9	
21							3.0	
22		3.36					2.3	
23							2.8	

Time: 120°E.
Length of time sweep: 16 Mc to 0.5 Mc in fifteen minutes.

Table 43

Slough, England (51.5°N, 0.6°W) July, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	313	3.86						3.0
01	312	3.61						3.0
02	312	3.18						3.0
03	310	3.01						3.0
04	306	3.21						3.0
05	306	3.73						3.0
06	298	4.19						3.0
07	290	4.63						3.2
08	288	4.72						3.1
09	272	4.83						3.4
10	289	4.81						3.1
11	287	4.85						3.1
12	278	4.84						3.2
13	285	4.70						3.1
14	307	4.67						3.0
15	297	4.70						3.1
16	314	4.36						2.9
17	308	4.75						3.0
18	296	4.35						3.1
19	296	5.32						3.1
20	282	5.35						3.2
21	287	5.70						3.1
22	298	5.03						3.0
23	302	4.33						3.0

Time: 0°.
Length of time sweep: 0.5 Mc to 16 Mc in four minutes.

Table 44

(Corrections and additions to previously issued final data.

Kermadec Is. (29.2°S, 177.9°W) July, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03							2.5	
04								
05	235						2.2	
06	242						1.9	
07	224	3.72						
08								
09								
10								
11								
12								
13	277						4.1	
14							5.0	
15							4.7	
16							4.6	
17							3.7	
18							3.6	
19							2.3	
20							2.2	
21							2.0	
22								
23								

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

Table 45

Kermadec Is. (29.2°S, 177.9°W) June, 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	264	3.38						
01								
02								
03	264	3.72						
04	265	3.40						
05	241	3.09					2.0	
06	246	3.12						
07	230	3.96						
08	236	4.92	216	3.03	118	2.00		
09	257	5.10	226	3.62	117	2.41		
10	266	5.27	239	3.94	116	2.70		
11	274	5.13	236	4.02	113	2.89		
12	294	5.03	240	4.05	112	2.90		
13	277	5.31	236	3.98	112	2.92		
14	271	5.31	229	3.93	114	2.73	3.0	
15	267	5.42	228	3.65	113	2.58	4.0	
16	251	5.20	232	3.18	112	2.26	3.5	
17	230	4.61			105	1.98	3.3	
18	235	3.96					3.2	
19	238	3.56					3.0	
20	246	3.58					2.2	
21	252	3.49						
22								
23								

Time: Local.
Length of time sweep: 1.8 Mc to 12.8 Mc. Manual operation.

TABLE 46

Washington, D.C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

IONOSPHERE DATA-I

Hourly values of $h'F_2$ in {km / Mc} for December 1944
(Month)

Records measured by: S. M. O.
J. T. D.

RESTRICTED

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	260	280	(260)	240	240	230	230	220	220	240	240	260	250	250	260	[250]^C	220	220	240	240	240	280	260	240	5870	
2	(240)	(260)	260	240	240	240	(280)	250	240	260	240	260	260	280	260	260	220	220	220.	220	240	300	300	280	6070	
3	260	240	260	260	220	240	220	210	220	240	240	240	240	250	240	230	230	220	220	240	250	(260)	260	(280)	5770	
4	260	250	260	240	(240)	220	220	220	220	220	240	240	250	[250]^C	240	240	230	220	220	240	220	250	(280)	320	5790	
5	280	280	260	240	240	220	280	240	230	240	220	280	260	C	C	240	220	210	220	240	(270)	(300)	300	280	5550	
6	290	260	260	220	220	230	240	240	220	220	220	260	260	240	240	240	210	200	220	(280)	240	240	300	(280)	5830	
7	270	240	260	230	240	240	(200)	220	220	220	230	240	230	250	240	230	240	220	200	240	260	250	250	300	5720	
8	270	280	260	240	240	220	250	230	220	230	260	240	260	250	240	240	220	220	240	240	240	260	280	280	5910	
9	260	250	250	260	240	240	220	240	220	220	220	260	(270)	260	260	240	240	220	240	240	240	240	240	260	5830	
10	280	250	260	260	240	240	230	260	220	220	260	240	240	250	260	230	240	220	220	240	220	270	(310)	(310)	5970	
11	(280)	280	300	240	240	230	240	240	220	220	220	220	250	250	250	240	220	220	280	240	240	(280)	(280)	280	5960	
12	280	260	260	240	240	220	240	240	220	220	[250]^C	(240)	230	230	230	230	220	220	240	230	240	260	280	300	5820	
13	280	280	260	250	240	220	240	260	220	230	250	260	260	270	240	240	220	220	240	230	260	250	240	270	5930	
14	280	280	260	240	240	(230)	(300)	260	240	240	C	C	C	260	240	230	230	220	250	240	250	240	[280]^A	300	5310	
15	[280]^A	270	280	250	260	240	(270)	240	240	240	240	260	250	250	[240]^C	240	240	220	240	(260)	[300]^A	320	280	260	6170	
16	260	240	280	300	300	280	280	300^K	270^K	G^K	C^K	C^K	C^K	G^K	(300)^K	240^K	240^K	280^K	300^K	280^K	260^K	240^K	260^K	300^K	5210	
17	260^K	300^K	280^K	(260)^K	240^K	280^K	(300)^K	280^K	230^K	240^K	240^K	260^K	260^K	280^K	240^K	260^K	220^K	220^K	240^K	240^K	240^K	290^K	280^K	(300)^K	6240	
18	[300]^A_K	320^K	320^K	260^K	260^K	280^K	(280)^K	260^K	240	[240]^A	250	C	C	260	230	240	230	230	220	(260)	[270]^A	[300]^A	(300)	290	5840	
19	280	[280]^A	280	300	250	240	260	240	220	220	240	(290)	260	240	[240]^C	240	220	220	220	220	240	A	A	A	5200	
20	(300)	300	300	280	260	240	220	260	220	240	(260)	240	260	[240]^C	260	240	230	220	240	240	240	260	280	(330)	6160	
21	320	280	250	260	A	A	[260]^A	280	240	240	C	C	250	260	240	240	240	220	240	220	240	300	A	(340)	4920	
22	280	270	260	240	240	240	220	200	220	240	240	260	240	240	240	240	230	220	240	240	240	260	280	280	5860	
23	300	(290)	260	250	240	240	240	230	230	220	240	260	240	240	260	240	220	220	240	220	240	(280)	300	300	6000	
24	(280)	280	280	240	260	240	230	240	220	220	230	260	260	260	260	250	220	220	200	220	240	270	280	280	5940	
25	300	320	260	240	240	260	240	240	240	240	260	250	240	240	260	240	240	220	230	(230)	240	(300)	280	(300)	6110	
26	(280)	270	(260)	260	240	240	240	240	220	260	270	260	260	250	260	260	230	220	230	240	[260]^A	(280)	280	280	6090	
27	280	270	260	260	240	260	280	300	240^H	(280)	300^K	340^K	340^K	280^K	270^K	280^K	C^K	C^K	C^K	240^K	260^K	290^K	(280)^K	[280]^C_K	5830	
28	[320]^A_K	(300)^K	[280]^A_K	280^K	300^K	(300)^K	(260)^K	300^K	240	280	260	240	260	260	240	240	230	220	220	220	220	(270)	270	300	6310	
29	320	280	280	240	260	(270)	[310]^A	(280)	220	220	260	240	240	240	240	240	230	220	220	220	260	(280)	280	280	6130	
30	260	250	240	240	220	260	280	260	240	240	260	250	260	240	[250]^A	240	230	220	(260)	(220)	240	260	260	300	5980	
31	270	270	260	230	220	220	300	(300)	220	240	280	260	260	250	240	240	240	220	220	220	260	270	260	280	6030	
Sum	8680	8480	8300	7790	7350	7310	7860	7780	7080	7080	6920	6910	7140	7320	7470	7310	6850	6640	7010	7350	7660	8150	8330	8680	181350	
Mean[1]	280	274	268	251	245	244	254	251	228	236	247	256	255	252	249	242	228	221	234	237	247	272	277	289		
Mean[2]	278	270	265	250	242	239	251	246	227	234	245	252	252	250	247	240	228	219	231	235	246	271	277	289		
Median	280	280	260	240	240	240	240	240	220	240	240	260	260	250	240	240	230	220	235	240	240	270	280	280		

[1] For all days of the month

[2] For quiet days

TABLE 47

IONOSPHERE DATA - 2

RESTRICTED

Washington, D. C. (Location) — Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $f^{\circ}F_2$ in {No. / Mc} for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	2.3 F	2.0 F	2.3 F	3.2 F	(3.3) F	3.5 F	3.4 F	4.0 F	5.3	6.2	5.6	(6.7)	6.8	7.2	7.1	[6.6] C	5.5	5.3	4.1 F	3.6 F	3.1 F	2.6 F	2.7 \ F	3.2 F	25.6	
2	3.3 F	2.9 F	(3.1) F	3.4 F	2.8 F	2.5 F	[2.3] F A	3.0 F	4.4	5.0	6.1	6.0	6.7	6.7	7.0	7.2	6.9	5.4	4.0 F	3.4 F	(2.4) F	[2.9] F	2.0 F	1.8 F	122	
3	1.9 F	(1.8 \ F	(1.8 \ F	(2.6 \ F	[2.8] F	4.4 F	4.2	4.1	5.3	7.3	5.8	6.8	7.2	6.2	(7.1)	6.7	5.4	5.1	3.8 F	3.2 F	(2.8) F	2.8 \ F	3.1 E	2.3 F	134.5	
4	[2.8] F	(3.8 \ F	4.3 F	(4.5 \ F	4.4 F	4.6 F	(3.3 \ F	3.5 F	5.1 F	5.6	6.2	6.3	7.0	[6.8] C	6.6	5.9	5.6	4.8 C	3.4 F	3.2 F	2.6 F	1.9 F	< 1.6	< 1.6	135.4	
5	(7.1) F	1.7 F	2.5 E	(2.7 \ F	2.3 F	2.2 F	1.7 F	2.5 E	5.1	6.3	(5.8	(5.7)	(7.8)	C	C	6.7	(5.8)	5.3	3.3 F	2.6 F	2.3 F	(2.3) F	2.0 F	(1.9) F	122	
6	1.9 F	(1.9) F	2.6 F	3.2 F	3.3 F	3.0 F	3.0 F	3.4 F	4.9	6.1	5.2	5.9	6.3	6.6	6.3	6.5	(5.4	(5.3)	2.9 E	2.2)	2.0 F	2.0 F	1.8 \ F	1.7 F	93.4	
7	1.9 F	1.7 F	2.1 F	2.7 F	2.8 F	(2.9 F	2.5) F	3.2 F	4.9	5.0	5.4	(5.3)	(5.4)	6.4	5.9	5.6	5.7	5.8)	3.5 F	2.6 F	2.3 F	2.3 \ F	2.1 F	(1.8) F	89.2	
8	1.7 F	1.7 F	(1.8) F	1.9 F	2.5 F	2.8 F	2.4 F	3.1 F	5.1	5.7	6.2	5.7	6.8	6.2	6.8	6.2	5.8 F	4.2	3.4 F	3.2 F	3.0 F	2.5 F	2.1 F	2.2 F	93.0	
9	(3.3) F	3.5 F	3.4 F	3.5 F	3.8 C	3.6	3.4	(3.4)	(5.3)	(6.0)	5.2	(5.4)	5.6	6.2	6.8	6.2	6.0	5.3	4.2 F	3.4	3.3	2.8 F	2.6 F	2.2 F	124.4	
10	2.1 F	2.2 F	2.6 F	2.7 F	3.2 E	3.1 F	2.8 F	3.3 F	(5.7)	6.1	(6.6)	(7.3)	(7.2)	(7.4)	6.6	(7.2)	5.3 F	5.6	4 F	3.3 F	2.5 F	2.2 F	(1.9)	(2.0)	130	
11	2.1 F	(2.4 F	3.2 F	3.4 F	3.7 F	3.3 F	3.1 F	3.4 F	5.6	(5.7	6.1	7.1	(6.8)	(7.0)	5.9 F	6.3	6.8	4.6	3.3 F	3.7 F	2.6 F	(2.4) F	(2.5) F	2.3 F	123.3	
12	(2.6) F	2.9 F	3.4 F	3.6	3.7 F	3.4 F	3.1 F	2.9 F	6.3	(5.4	[5.7] C	6.4	7.4)	7.0	5.6	6.7	6.3	4.8	4.4	3.2	2.6	2.2 E	2.1 F	2.0 F	123.7	
13	2.0 F	2.2 F	2.8 F	3.7	3.7 F	3.6	2.8 F	3.2 F	6.0	5.6	6.6	7.1	(7.3)	8.6	8.4	7.8	6.9	5.7	4.8	4.2	3.5	3.3	2.9 F	2.8 F	145.5	
14	2.3 F	(2.2) F	[2.9] F	(3.5) F	3.1) F	(2.2) F	.8 F	(3.3) F	(5.5	6.0	C	C	C	7.8	6.6	5.7	5.8	5.6	4.0	3.6	3.2 F	2.7 F	(2.7) F	2.3 F	82.8	
15	(2.3) F	1.9 F	1.7 F	.8 F	1.9 F	2.1 F	(2.0) F	2.9) F	4.7	5.8	6.0	6.2	6.7	6.8	[6.5] C	6.1	5.9	5.2 F	4.0 F	3.6 F	[2.8] A	(2.5) F	2.6 F	2.6 F	94.6	
16	2.5 F	2.2 F	2.6 F	2.4 F	2.4 F	2.3 F	(2.2) F	(2.3) F K	3.0 F K	6 K	C K	C K	C K	6 K	4.7 K	(4.1) K	(4.4 K	4.3 K	3.7 F K	3.7 F K	3.7 F K	3.2 F K	2.1 F K	1.7 F K	57.5	
17	(2.3) F K	2.0 F K	1.9 F K	1.7 F K	1.6 F K	(1.3) F K	[1.7] F A	2.4 F K	4.6 K	5.7 K	6.8 K	7.8 K	(9.6) K	9.0 K	8.6 K	9.3 K	(9.7) K	(6.8) K	5.6 F K	4.8 F K	3.8 F K	2.2 F K	(1.7) F K	1.8 K	2	
18	[1.5] A K	(1.4) F K	(1.3) F K	(1.5) F K	1.5) F K	(1.6) F K	[1.6] F K	(2.5) F K	5.1 F	[6.5] A	7.0	C	C	7.6	6.8	6.9	6.3	7.1	5.2	2.9) F	(2.7] A	[1.7] A	(1.6)	1.7 F	5.1	
19	1.8 F	[1.8] A	1.7 F	1.8 F	2.1 F	2.2 F	2.2 F	2.8 F	(4.9) F	5.3	(6.4)	8.0	9.1	7.4	[7.6] C	(7.6)	7.0	5.9	4.7	3.0 F	2.0 F	(1.8)	[2.0] A	[1.9] A	6.0	
20	1.9 F	1.7 F	1.7 F	1.8 F	2.0 E	2.6 F	2.1 F	2.5	4.5	6.6	7.4	7.6	7.4	[7.5] C	6.8	6.9	6.9	5.6	3.9	3.6	2.9	2.3 F	2.5 F	2.5 F	9.2	
21	(2.5) F	2.7 F	2.9 F	2.9	[3.3] A	(3.0)	[2.2] A	2.3 E	5.1	6.0	C	C	(8.0)	(7.6)	6.8	(7.6)	(7.0)	5.9	4.6	3.8 F	(2.2) F	1.8	[1.8] A	1.9	9.6	
22	2.1 F	2.3 F	2.5 F	(2.5) F	2.7 F	2.8 E	2.9 E	2.7 F	4.7	6.0	6.6	(9.0)	7.0	6.4	(7.0)	7.0	6.1	6.5	5.1	4.0 F	3.3 F	2.6 F	2.4 F	2.3 F	146.5	
23	2.3 F	2.2 F	2.2 F	2.6 F	2.6 F	3.1	3.2	(2.5) F	(5.1)	5.1	(7.0)	6.4	(6.7)	6.5	6.3	6.6	5.8	5.5	4.8	3.1	(2.2) F	2.0 F	1.9 F	2.0 F	97.7	
24	1.9 F	2.0 F	2.1 F	2.8 F	3.0 F	3.2	3.3	2.9 F	4.4	4.9	(7.0)	7.0	(6.9)	6.3	6.0	6.6	5.5	5.2	4.2	2.8	2.3 F	2.2 F	2.2 F	2.1 F	96.8	
25	1.9 F	1.6 F	1.9 F	2.7 F	3.3 F	3.3	3.3	2.6 F	5.1	5.6	(7.2)	(7.2)	5.9	(6.0)	6.6	6.2	6.2	5.2	4.8	3.6 F	(2.3) F	2.2 F	2.2 F	(2.4) F	99.3	
26	(2.6) F	(2.5) F	(2.3) F	2.7 F	3.4 F	3.8 F	3.6	3.1 F	(5.4)	6.6	(7.0)	8.4	(7.5)	7.1	6.5	6.8	6.4	6.8	5.1	4.0 F	[3.0] A	(2.6) F	(2.7) F	(2.7) F	1.26	
27	(3.2) F	3.4 F	3.7 F	(3.6)	3.3 F	3.2 F	3.1 F	3.1 F	4.7 H	6.2	7.0 K	6.7 K	6.2 K	6.6 K	6.4 K	6.6 K	C K	C K	C K	(6.8) K	(5.2) K	3.2 F K	(2.6) F K	[1.4] C K	96.2	
28	[1.8] A K	1.6 F K	(1.8) K	1.4 F K	1.3 F K	1.3 F K	(1.5) F K	(2.0) F K	4.3	(5.3)	(7.0)	7.0	(7.4)	(7.4)	7.2	6.8	6.2	6.4	4.9	3.0 F	2.6	1.8 F	1.8 F	(1.7) F	93.5	
29	1.7 F	1.7 F	1.8 F	2.3 F	2.6 F	2.2 F	(2.1) F	2.6 F	4.8	5.4	7.3	8.5	(7.8)	7.4	7.2	7.1	6.4	5.3	4.8	3.5 F	(2.2) F	(2.3)	(2.0) F	1.9 F	100.9	
30	2.1 F	(2.3) F	2.5 F	3.0 F	(2.8) F	2.1 F	(2.0) F	2.4 F	(5.1)	5.6	(7.2)	8.0	(7.4)	7.2	(6.7)	6.6	6.2	6.0	5.0 F	3.4 F	2.1 F	2.0 F	1.8 F	1.9 F	101.4	
31	1.8 F	2.2 F	2.6 F	3.2 F	(2.9) F	(1.8) F	1.5 F	(2.0) F	4.4	5.1	6.5	7.9	7.5	6.9	6.4	6.7	5.6	4.6	3.8 F	3.2 F	(2.3) F	2.2 E	2.2 E	1.9 F	95.2	
Sum	68.1	68.4	76.0	85.3	87.8	87.0	79.7	89.9	154.4	173.7	179.9	187.6	199.4	203.8	200.8	206.8	184.8	165.1	127.4	107.6	85.2	72.5	68.2	64.3	3023.7	
Mean[1]	2.20	2.21	2.45	2.75	2.83	2.81	2.57	2.90	4.98	5.79	6.42	6.95	7.12	7.03	6.69	6.67	6.16	5.50	4.25	3.47	2.75	2.34	2.20	2.07		
Mean[2]	2.23	2.26	2.54	2.88	2.98	2.96	2.70	2.99	5.06	5.79	6.39	6.92	7.06	6.97	6.47	6.67	6.10	5.50	4.22	3.30	2.59	2.28	2.21	2.12		
Median	2.1	2.2	2.5	2.7	2.8	2.9	2.5	2.9	5.1	5.7	6.55	7.0	7.1	6.95	6.65	6.7	6.05	5.35	4.15	3.4	2.6	2.3	2.1	2.0		

[1] For all days of the month

[2] For quiet days

TABLE 48

IONOSPHERE DATA-3

RESTRICTED

Washington, D. C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Half Hourly values of $f^{\circ}F_2$ in {Mc} for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Sum	Mean
1	2.3 F	2.2 F	(2.6) F	(3.2) F	3.5 F	3.5 F	3.5 F	4.5	6.0	6.3	6.6	7.0	7.2	6.6	[6.9] C	6.5	5.8	(4.6)	3.7 F	3.6 F	2.6 F	2.7 F	3.0 F	3.1 F	107.5	
2	3.2 F	(2.8) F	(3.5) F	3.3 F	2.7 F	(2.8) F	(2.3) F	3.7 F	4.6	5.2	6.0	6.6	6.2	7.1	7.0	6.8	6.1	4.4	4.0 F	(3.3) F	(2.2) F	(1.9) F	(2.0) F	1.9 F	99.6	
3	(1.9) F	[1.8] F	(1.8) F	[2.7] F	[2.7] F	4.4	4.3	(4.7) F	6.3	6.4	6.0	(7.7)	5.8 F	(6.8)	6.7	(6.5)	5.1	4.4	3.3 F	3.2	(2.8) F	(3.1) F	[2.7] A	(2.4) F	103.7	
4	(3.5) F	(4.3) F	(4.5) F	(4.4) F	(4.3) F	3.7 F	(2.7) F	4.4 F	5.3	5.4	5.8	6.0	[6.9] C	6.6	5.4	5.3	5.4 F	4.1 F	3.3 F	3.1 F	2.0 F	1.8 F	A	(1.8) F	100.0	
5	1.7 F	2.0 F	2.5 F	(2.4) F	2.3 F	1.8 F	1.9 F	3.9 F	5.5	(6.5)	6.6	6.2	C	C	6.4	(6.2)	5.1 F	4.5 F	3.1 F	2.6 F	(2.2) F	2.1 F	2.0 F	1.8 F	79.3	
6	(1.9) F	2.1 F	3.1 F	3.6 F	3.2 F	3.1 F	2.8 F	4.1 F	5.8	5.5	(5.4)	(6.9)	7.1	6.9	6.2	(5.8)	(5.4)	4.5	(2.9) F	(2.1) F	2.1 F	(1.6) F	(1.9) F	(1.6) F	95.6	
7	(1.7) F	(1.7) F	(2.5) F	2.8 F	2.7 F	(2.8) F	(2.6) F	4.2	(5.4)	(5.7)	(5.4)	6.3	5.9	5.8	5.4	(5.1)	6.2	4.9	2.9	(2.3) F	2.2 F	2.0 F	2.0 F	(1.8) F	90.3	
8	1.6 F	1.6 F	1.8 F	(2.2) F	2.8 F	2.3 F	2.6 F	4.1	5.4	5.5	5.8	6.6	6.6	6.2	(5.4)	6.2	5.2	3.7 F	3.5 F	3.0 F	2.8 F	2.2 F	2.1 F	2.6 F	91.8	
9	(3.2) F	3.5 F	3.5 F	3.7 F	3.7	3.5 F	3.2	4.6	5.9	6.6	6.4	(5.4)	6.3	6.7	6.8	5.9	5.5	4.4	3.8	3.4	3.2	2.8 F	2.3 F	(2.2) F	106.5	
10	2.1 F	2.3 F	2.6 F	3.0 F	3.2 F	3.0 F	2.7 F	4.6 F	5.4	6.0	6.8	6.2 F	7.2	7.4	(7.2)	(5.7)	5.9	5.~	3.6 F	3.0 F	2.2 F	2.1 F	(1.9)	(2.0) F	101.3	
11	2.3 F	(2.8) F	3.5 F	3.5 F	3.6 F	3.1 F	3.1 F	(4.4) F	5.7	6.4	(7.0)	(6.0)	(6.2)	(6.6)	[6.5] C	6.5	5.7	3.7	3.5 F	3.1 F	2.6 F	[2.4] A	2.3 F	2.3 F	102.8	
12	2.7 F	(3.1) F	3.5	3.5 F	3.8 F	3.1 F	2.8 F	3.8 F	5.2	(5.1)	6.3	6.8	7.2	(7.4)	(6.7)	(6.2)	5.3	(4.2) F	3.7	(2.8)	2.3 F	2.1 F	2.0 F	2.0 F	101.6	
13	2.0 F	2.3 F	3.5	3.8	3.7 F	3.0 F	(2.7) F	4.5	5.4	6.0	5.6	(7.4)	7.6	8.8	8.2	7.7	6.4	4.8	4.3	3.6 F	3.4	3.1 F	2.7 F	2.8 F	113.3	
14	(2.2) F	[2.5] F	[3.4] F	[3.4] F	[2.7] A	(1.8) F	(2.1) F	4.0 F	6.2	C	C	C	7.3	6.6	7.0	6.3	5.4	4.3	4.0	3.3	2.9 F	2.6 F	2.3 F	[2.2] A	82.3	
15	(1.8) F	(1.8) F	(1.8) F	1.9 F	(1.8) F	(2.2) F	(2.2) F	4.0 F	5.2	5.6	6.0	6.4	6.5	6.8	(6.5)	5.8	6.1	4.2 F	4.0 F	3.1 F	[2.4] A	2.7 F	2.7 F	2.3 F	94.0	
16	(2.8) F	2.4 F	2.1 F	2.5 F	2.4 F	2.2 F	2.3 F	2.9 F K	(3.1) K	C K	C K	C K	G K	G K	4.3 F K	4.3 K	4.6 K	3.9 F K	3.8 F K	3.7 F A	3.6 F K	2.5 F K	1.8 F K	(1.7) F K	56.9	
17	2.1 F K	2.~ F K	1.8 F K	1.~ F K	[1.3] A K	[1.2] A K	(1.2) F K	4.0 K	5.2 K	6.4 K	6.6 K	8.7	(9.7) K	9.1 K	8.8 K	(9.7) K	9.0 K	6.2 K	5.3 K	4.9 K	2.9 F K	(1.7) F K	[1.7] A K	[1.7] A K	112.9	
18	[1.4] A K	[1.3] A K	(1.7) F K	1.4 F K	1.6 F K	1.8 F K	[1.5] F K	3.4 F	(6.4	6.4	C	C	[7.5] C	7.6	7.0	6.6	6.7	5.5	(3.5)	(2.8) F	1.8 F	(1.7)	1.6 F	(1.8) F	81.0	
19	[1.~ A	1.8) F	1.6 F	1.9 F	2.2 F	2.2 F	2.1 F	4.0 F	6.7	5.6	(6.7,	7.0	8.6	7.2	[7.8] C	7.2	6.0	4.0 F	3.9	2.3 F	(2.1)	(2.0)	A	(1.9)	99.5	
20	1.~ F	1.8) F	1.7 F	1.9 F	2.3 F	2.7 F	1.~ F	3.8	6.7	(5.6,	(7.8,	7.6	[7.8] C	7.1	6.6	7.2	6.7	4.6	3.8	3.2	2.7 F	(2.5) F	2.6 F	2.6 F	102.5	
21	2.3 F	2.8 F	2.8 F	[2.7] A	[3.2] A	(2.7,	[1.7] A	3.6 F	5.4	C	C	8.4	(8.0)	8.5	(7.1)	6.7	6.3	(4.9,	(4.4) F	2.9	[2.0] A	[1.8] A	[1.8] A	2.0	89.9	
22	2.2 F	2.3 F	2.5 F	2.6 F	2.6 F	2.8 F	2.8 F	3.7	5.0	6.8	7.4	8.1	6.4	(6.9)	7.2	6.6	[6.7] C	5.1	4.5 F	3.8 F	3.0 F	2.5 F	(2.3)	(2.3) F	106.0	
23	(2.2)	2.1 F	2.3 F	2.6 F	2.8 F	3.1	2.5 F	4.1	5.1	(6.5)	7.8	6.4	6.6	6.4	6.5	6.3	5.3	4.7	3.8	2.7 F	2.0 F	1.9 F	(1.8) F	2.1 F	97.9	
24	1.7 F	(2.0) F	2.~ F	2.7	3.2 F	3.2	2.9 F	4.1	5.4	(6.5)	5.9	7.2	6.1	6.3	6.4	5.8	5.5	5.1	3.6	2.3 F	2 F	2.3	2.3	2.0 F	97.6	
25	1.7 F	1.8 F	(2.2) F	3.1 F	3.4 F	3.2 F	2.1	4.~	5.4	5.8	6.9	6.4	6.8	6.3	(6.8)	6.1	5.9	5.0	4.3	(2.9) F	2.~	2.~	2.3 F	(2.5) F	100.3	
26	2.5 F	(2.6) F	(2.5) F	(3.2) F	3.6 F	3.8	3.1 F	3.~	5.~	6.4	7.0	7.8	7.3	(6.7)	6.6	6.6	(6.5,	5.5 F	5.2	3.3 F	[2.8] A	(2.5) F	3.7 F	(3.0) F	111.1	
27	3.4 F	3.4 F	3.7 F	3.6 F	3.3 F	3.0 F	2.6 F	3.7 F	5.2	6.~	(6.6) A	6.2 K	6.2 K	6.0 K	6.2 K	7.0 K	C K	C K	C K	6.2 K	3.5 F K	(3.3) K	(2.6) F K	(1.5) K	94.0	
28	(1.7) K	(1.5) K	(1.6) K	(1.4) K	(1.3, F K	(1.4) F K	1.5 F K	3.4	7.5	6.6	7.4	7.~	7.3	7.6	6.4	6.4	6.3	4.4	3.7 F	2.6	1.8 F	1.7 F	1.8 F	1.6 F	73.2	
29	1.8 F	1.8 F	2.1 F	(2.4) F	(2.4) F	2.0) F	2.2	4.~	4.8	6.5	7.9	8.2	7.0	7.3	7.1	7.0	6.1	(5.2)	4.3	3.0 F	(2.2) F	(2.1) F	1.9 F	(2.0) F	101.3	
30	2.0 F	2.5 F	2.7 F	3.0 F	(2.5) F	(2.1) F	2.1 F	3.~	5.4	6.4	(7.5,	7.6	6.8	7.0	6.7	6.6	6.1	4.8 F	(4.3)	(2.7) F	2.1 F	2.0 F	1.8 F	(1.8) F	100.4	
31	2.8 F	(2.6) F	(3.2) F	(3.5) F	(2.4) F	1.7 F	(1.5) F	(~.~) F	4.~	5.6	7.~	7.6	6.5	6.2	7.0	5.8	5.2	(4.4) F	[3.5] A	2.7 F	(2.2) F	2.2 F	(2.2) F	2.0 F	96.0	
Sum	68.5	71.5	80.7	87.8	87.2	83.2	76.5	123.1	168.0	170.7	178.6	197.7	202.6	200.5	206.8	198.4	176.9	141.8	115.5	97.5	77.1	70.1	64.1	65.3	3010.1	
Mean[1]	2.21	2.31	2.60	2.83	2.81	2.68	2.47	3.97	5.42	6.10	6.61	7.06	6.71	6.87	6.70	6.34	5.83	4.70	3.80	2.95	2.40	2.24	2.23	2.16		
Mean[2]	2.26	2.38	2.70	2.98	2.96	2.81	2.58	4.01	5.51	6.08	6.62	7.05	6.71	6.87	6.70	6.34	5.83	4.70	3.80	2.95	2.40	2.24	2.23	2.16		
Median	2.1	2.2	2.5	2.7	2.8	2.8	2.6	4.0	5.4	6.4	6.6	6.95	6.85	6.75	6.7	6.4	5.7	4.6	3.8	3.0	2.2	2.2	2.1	2.0		

[1] For all days of the month [2] For quiet days

TABLE 49

IONOSPHERE DATA-4

RESTRICTED

Washington, D. C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of $h'F_1$ in {mm / km} for December 1944
(Month)

Records measured by: S.M.O.
J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1										240	[220]A	220	220	220	220	C									1340	
2										220	220	180	(180)H	220	220	210									1450	
3											220	220	220	220	220										1100	
4											220	220	190H	[210]K	(220)	220									1280	
5											220	220	220	C	C	200									860	
6											(210)	200	220	(180)H	230										1070	
7											230	240	230	240	220										1160	
8											220	240	220	240	230										1150	
9												230	220	240	(250)										940	
10											210	A	A	240	220										670	
11											220	220	200	230	220										1090	
12											C	(220)	[220]A	230	220										890	
13											220	260	240	240	240										200	
14											C	C	C	240	230										470	
15											[220]A	[220]A	220	220	[220]K	220									1320	
16										240K	C K	C K	C K	230K	260K	K									750	
17										K	230K	220K	260K	240K	240K	220K									1410	
18										[230]A	200	C	C	240	220										890	
19											(210)	220	220	220	[210]C	[200]									1280	
20											200	240	220	[220]K	220	220									1320	
21											C	C	200H	240	220	240									900	
22										270	240	240	230	220	[220]A										1390	
23											240	220	220	220	220	220									1340	
24											230	220	220	220	250H	250									1390	
25											230	230	230	220	240										1150	
26										A	A	230	230	220	230	(250)									1160	
27										220	260K	260K	(260)K	240K	240K	240K									1720	
28										230	240	220	220	240	[230]A										1380	
29											240	240	220H	200	200										1100	
30										220	[220]A	220	220	(220)	A	A									1100	
31											260	240	[220]A	220	220										1160	
Sum										1860	5630	5890	5970	6780	6580	2690									35400	
Mean[1]										232	225	226	221	226	227	224										
Mean[2]										228	223	225	218	225	225	223										
Median										230	220	220	220	220	220	220										

[1] For all days of the month

[2] For quiet days

TABLE 50

IONOSPHERE DATA-5

RESTRICTED

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $f^{\circ}F_1$ in Mc for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1															3.6										3.6	
2										3.4	3.7	[3.8]	3.9 H	3.9	(3.8)	3.4									25.9	
3																										
4													H													
5												[3.7]	(3.9)	C	C										7.6	
6											(3.4)	(3.5)	[4.0]	[3.9] H											14.8	
7																										
8															(3.7)										3.7	
9																										
10											A	A	A	(3.9)	3.7										7.6	
11												[3.9]	(3.9)												7.8	
12											C															
13														(3.9)											3.9	
14											C	C	C													
15												A	[4.0]	[3.9]	[3.8] C										11.7	
16										3.5 K	C K	C K	C K	3.8 K	K	K									7.3	
17										K	K	K	K	K	[3.7] K	K									3.7	
18												C	C													
19												4.4			C										4.4	
20														C												
21											C	C	H													
22															A											
23											[3.9]	[4.0]	4.0	(3.9)											15.8	
24															H											
25												3.9													3.9	
26										A	A															
27											K	3.8 K	3.8 K	3.8 K	K	K									11.4	
28											[3.6] A	[3.8]													7.4	
29													H	[3.9]	(3.5)										7.4	
30											A		3.9	3.9	A	A									7.8	
31												3.9	[3.9]	(3.8)											11.6	
Sum										6.9	14.6	38.7	35.3	42.6	25.8	3.4									167.3	
Mean[1]										3.45	3.65	3.87	3.92	3.87	3.68	3.40										
Mean[2]										3.40	3.65	3.88	3.94	3.89	3.68	3.40										
Median										3.45	3.65	3.85	3.9	3.9	3.7	(3.4)										

[1] For all days of the month

[2] For quiet days

TABLE 51

IONOSPHERE DATA - 6

RESTRICTED

Washington, D.C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of h'_E in {mc / km} for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1									120	120	110	110	110	120	110	[12∂]^c	110								1030	
2									120	120	120	110	110	110	100	110	110								1010	
3									120	120	120	110	110	110	120	110	110								1030	
4									120	100	100	100	110	[00∂]^c	110	110	110								960	
5									120	120	120	120	120	C	C	120	120								840	
6									120	120	120	120	120	120	120^H	120	110								1070	
7									120	120	120	120	120	120	120	120	120								1080	
8									(120)	120	110^K	120	100	120	120	120	120								1050	
9									120	120	120	120	110	120	120	120	120								1070	
10									120	110	110	110	110	110	120	120	130								1040	
11									120	110	110	110	110	120	120	120	120								1040	
12									120	110	[10∂]^c	100	110	110	110	110	110								990	
13									120	110	110	140	110	100	110	120	120								1040	
14									120	120	C	C	C	120	120	120	120								720	
15									120	120	120	120	120	120	[12∂]^c	120	120								1080	
16									110^K	120^K	C^K	C^K	C^K	120^K	110^K	110^K	120^K								690	
17									110^K	120^K	110^K	110^K	110^K	110^K	120^K	100^K	100^K								990	
18									140	110	110	C	C	120	110	120	120								830	
19									120	110	120	120	120	120	[12∂]^c	120	120								1070	
20									(160)	120	120	120	120	120	120	120	110								1110	
21									120	120	C	C	120	120	120	120	120								840	
22									120	120	120^H	120	120	120	120	120	120								1080	
23									140	120	120	110	120	120	120	120	120								1090	
24									140	120	130	120	120	120	110	130	140								1130	
25									(140)	120	130	120	130	130	120	120	120								1130	
26									120	120	120	120	120	120	120	120	120								1080	
27									120	120	[13∂]^K	140^K	[12∂]^K	120^K	120^K	120^K	^{K}								990	
28									120	110	110	110	120	120	120	120	120								1050	
29									120	120	120	120	110	110	110	120	120								1050	
30									120^H	110	110	110	110	110	110	120	120								1020	
31									120	120	110	110	110	110	(100)	130	(120)								1030	
Sum									3820	3620	3260	3140	3220	3490	3470	3670	3540								31230	
Mean[1]									123	117	116	116	107	116	116	118	118									
Mean[2]									124	116	116	116	107	116	116	119	118									
Median									120	120	120	120	120	120	120	120	120									

[1] For all days of the month [2] For quiet days

TABLE 52

IONOSPHERE DATA - 7

RESTRICTED

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of $f^{\circ}E$ in Mc for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1									A	(2.5)	[2.6]^{A}	2.8	[3.0]^{A}	[2.8]^{A}	2.6	[2.4]^{C}	(1.9)								20.6	
2									[1.9]^{F}	2.3	(2.6)	(2.8)	(2.8)	(2.7)	2.6	[2.3]^{A}	(1.8)								21.8	
3									AF	A	[2.7]^{A}	(3.0)^{F}	(3.0)	(2.8)	(2.6)	A	A								14.1	
4									(1.9)^{F}	2.5	(2.8)	2.8	2.8	[2.8]^{C}	[2.7]^{A}	2.4	(1.9)								22.6	
5									A	(2.4)	2.6	(2.7)^{F}	(3.0)^{F}	C	C	A	A								10.7	
6									1.9	2.4	(2.7)	[2.8]^{A}	(2.8)	(2.7)	2.4^{H}	(2.4)^{F}	A								20.1	
7									[2.0]^{A}	2.3	(2.7)^{F}	(2.8)	(3.0)	2.8	[2.6]^{A}	2.3	[1.9]^{A}								22.4	
8									2.2	2.6	(2.7)^{H}	(2.9)^{F}	2.9	(2.8)	(2.5)	2.4	A								21.0	
9									A	(2.6)	[2.8]^{A}	2.9	(3.0)	3.0	2.7	2.5	A								19.5	
10									(2.0)	A	A	A	[2.9]^{A}	2.9	2.6	A	A								10.4	
11									2.0^{J}	[2.4]^{A}	2.8	3.0	(3.0)	(2.8)	2.8	A	A								18.8	
12									2.1	2.4	[2.7]^{C}	(2.9)	3.0	2.8	(2.8)	(2.6)	(2.0)^{F}								23.3	
13									2.1	2.4	2.7	[2.9]^{B}	3.0	(2.9)	2.7	[2.5]^{A}	[2.1]^{A}								23.3	
14									A	A	C	C	C	2.8	[2.6]^{A}	A	A								5.4	
15									(2.0)^{F}	2.4	[2.7]^{A}	[2.8]^{A}	(2.9)	2.9	[2.8]^{C}	[2.5]^{A}	A								21.0	
16									(1.8)$^{F}_{K}$	2.3^{K}	C^{K}	C^{K}	C^{K}	(2.7)^{K}	(2.6)^{K}	[2.4]$^{A}_{K}$	[2.0]$^{A}_{K}$								13.8	
17									A^{K}	A^{K}	2.6^{K}	(2.8)^{K}	(2.8)^{K}	2.8^{K}	2.6^{K}	[2.3]$^{A}_{K}$	1.8^{K}								17.7	
18									[1.7]^{A}	[2.4]^{A}	2.5	C	C	2.9	(2.6)	A	A								12.1	
19									A	A	A	(3.0)	[3.1]^{A}	(2.9)	[2.7]^{C}	2.5	(2.0)								16.2	
20									(2.0)	[2.5]^{A}	2.7	(2.9)	(3.0)	[2.9]^{C}	2.8	2.5	1.9								23.2	
21									1.9	A	C	C	(3.0)	3.0	2.7	(2.6)	A								13.2	
22									[2.0]^{A}	(2.4)	2.7^{H}	A	A	A	A	A	A								7.1	
23									(1.9)^{F}	(2.2)	(2.8)	A	A	A	A	2.5	2.0								11.4	
24									1.9	(2.3)	(2.8)	2.9	2.9	[2.8]^{C}	2.6	2.3^{H}	2.0								22.5	
25									2.0	2.4	(2.7)	[2.8]^{A}	(2.9)	(2.9)	2.8	(2.4)	A								20.9	
26									(1.9)	A	A	A	(2.9)	A	A	A	A								4.8	
27									1.6	[2.1]^{A}	[2.6]$^{B}_{K}$	(2.7)^{K}	[2.8]$^{B}_{K}$	[2.6]$^{A}_{K}$	2.5^{K}	(2.3)^{K}	C^{K}								19.2	
28									(1.7)	[2.1]^{A}	[2.6]^{A}	(2.7)	(2.7)	2.7	2.6	A	A								17.1	
29									A	2.2^{H}	2.8	2.7	(2.8)	2.8	2.7	A	A								16.0	
30									(1.8)^{H}	2.4	(2.6)	A	A	A	A	A	2.0								8.8	
31									(1.9)	2.5	(2.6)	2.7	(2.8)	(2.9)	2.6	[2.4]^{A}	(2.3)								22.7	
Sum									44.2	57.0	67.1	62.3	72.8	73.4	68.8	48.5	27.6								521.7	
Mean[1]									1.92	2.38	2.68	2.83	2.91	2.82	2.65	2.42	1.97									
Mean[2]									1.93	2.38	2.69	2.84	2.92	2.84	2.66	2.44	1.98									
Median									1.9	2.4	2.7	2.8	2.9	2.8	2.6	2.4	2.0									

[1] For all days of the month [2] For quiet days

TABLE 53

IONOSPHERE DATA - 8

RESTRICTED

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of E_s in {Mc / km} for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	38 110	34 120	31 110	38 100	54 110 H	36 120	33 110	27 120	46 120	40 120	38 110	47 120	50 100	39 120	41 120	23 120	31 110	29 120	31 120	42 120	37 120 H	31 120	37 120	38 110		
2	40 110	39 110	32 110	42 120	40 110	45 110	68 100	47 100	63 120	58 120	46 120 H	41 120	42 110	40 100	41 100	35 110	40 120	35 120	49 120	39 120	39 110	39 100 H	30 120	27 110		
3	31 120	40 100	40 100	48 110	56 120	48 120 H	47 100	40 110	41 120	37 120	42 110	44 110	46 110	43 110	40 120	42 100	41 110	41 100	30 100	32 100	32 120	55 120	59 120	48 120		
4	36 110	31 110	41 100 H	47 110	45 110	46 110	45 120	30 120	39 120	39 100	41 110	39 120	41 100	40 100	40 110	40 110	39 110	35 120	41 110	39 110	32 100	31 100	44 120	42 110		
5	47 110 H	39 110	55 120	51 100	45 100	48 100	50 100	46 120	44 120	41 120	43 120		43 120	C	40 120	35 120	41 120	37 120	40 120	57 120	46 120	48 120	43 110	39 100		
6	39 100	39 110	48 100	30 100	30 110	30 100	48 110	(6.7) 120	36 110	41 110	39 120	40 120	34 120		39 120	48 120	39 110	38 100	48 120	45 120	40 120	33 120	37 110	39 120		
7	35 110	35 120	24 110	31 120	47 120	36 100	45 110	57 120	39 120	39 120	42 120	37 140	40 120	40 140	41 120	33 120	37 120	38 120	31 120	31 120	33 120	24 110	30 120 H	39 120		
8	39 100	40 110 H	40 120 H	41 100	40 120	54 110	40 110 H	57 120	44 120	68 100	37 120	40 120	38 100	39 120	40 120	41 120	35 120	35 120	32 120	34 120	19 120	37 120	27 110	31 100		
9	29 100	30 110	28 110	66 120	40 110	33 110	46 110	30 110	39 120	50 120	41 120	47 120	47 110	42 120	35 120	39 120	40 120	44 110 H	28 110	26 120	30 110	31 120	31 100	43 120		
10	43 100	30 120	43 110	27 110	37 100	35 120	54 110	41 110	41 120	46 110	58 110	49 110	54 110	40 110	42 120	41 120	38 120	34 120	41 110	31 110	36 110	46 120	47 120	69 110		
11	66 100 H	48 110	37 120	45 120	39 110	31 120	30 120	36 (110)	38 120	42 110	40 110	45 110	41 110	44 110 H	50 110	57 120	53 120 H	56 120	56 120	38 120	41 120	57 110	43 110	38 100		
12	56 100	36 100	30 100	29 100	39 100	41 100 H	49 100	39 100	42 110	41 100	43 100	42 100	46 100	40 100	38 110	36 110	28 110	24 110	47 110	30 110	31 120	31 120	31 120	36 110		
13	45 100	44 110	33 100	28 120	(39) 100	45 100 H	56 100 H	66 110	40 110	41 110	39 110	39 120	41 100	43 100	41 110	43 120	33 120	19 130	26 120	31 110	25 100	31 120	38 110	30 110		
14	28 100	29 110	30 120	27 120	40 120 H	48 120 H	55 120 H	52 120	46 110	36 120	C	C	47 110	52 120	(37) 120	35 120	(32) 120	40 120	28 140	26 120	24 140	41 120	58 120	56 120		
15	70 120	48 120	40 120	34 120	48 110 H	57 120	41 110	40 110 H	41 120	41 120	65 120	68 110	42 110 H	41 120	46 120	43 120 H	28 120	27 130	42 120	56 120	56 120	55 120	39 120	36 120		
16	29 120	(39) 100	39 120	39 120 H	36 110	40 110	35 110	39 120	39 110	37 120	C	C	47 110	43 110	39 110	39 110	42 120	49 110	30 120			•	36 120	24 110 H		
17	29 120	30 120	28 110 H	53 110 H	65 130	61 120	62 120	66 120	57 110	52 120	46 110	40 110	41 100	41 110	39 100	35 100	31 110	33 110	22 110	29 110		34 100	40 130	47 120		
18	65 120	44 110	34 120	29 120	39 120	45 120	47 120	40 120	64 120	74 110		C	C		48 120	30 120	41 120	45 120	46 120	65 120	50 120	66 120	62 120	45 120		
19	44 120	56 120	39 120	27 120	31 110	44 120	(23) 120	30 110 H	35 120	40 110	31 120		32 120		C	30 120	37 120	20 120	09 120	09 120	43 140	64 120	75 120	57 120		
20	47 120	49 120	39 120	41 120	57 110 H	54 120	57 120	41 120	36 120	46 120	30 120	32 120	32 120	41 110	38 120	30 100	36 110	39 120	39 120	19 120	27 120	30 120	25 120	43 120		
21	62 120	56 120	42 120	54 120	58 120	57 120	54 110	45 110	36 120	40 120	C	41 120			36 120	(30) 120	30 120	35 120	41 120 H	31 120	40 120	42 120	55 120	31 120		
22	37 120	09 120	09 120	43 120	17 120	43 120	40 140	(18) 140	30 120	29 120	30 120	33 120	53 120	39 120	52 120	47 120	29 120	30 120		29 140	33 130	39 130	66 120	64 120		
23	35 120	29 120	30 120	29 120	36 120	34 120	47 120	28 120	27 120	48 120	47 W0	66 110	57 120	41 120	44 120	38 120	30 110	35 120	30 120	32 120	33 120	37 120	37 110	39 110		
24	35 110	41 110	34 120	39 120	40 120	33 120	44 110	34 120	37 120	31 120	31 120				23 120					09 100	28 110	22 120		28 100		
25	(100)	24 120	(29) 120	38 120	57 120	39 120	(39) 120	29 120	38 120	31 120		30 120	53 130	31 120	34 120	56 120	54 120	41 120	41 120 H	44 120	41 120	31 120	40 120	34 120		
26	44 120 H	28 120	39 120	35 120	31 120	32 120	40 120	39 120	41 120	65 120	56 120	54 120	42 120	49 120	44 120	46 120	43 120	42 120	41 120	45 140	64 130	46 140	41 110 H			
27	(29) 120	32 120	46 120	29 120	38 120	30 120	39 120	48 110	37 120	(31) 120				30 120	35 120	27 120	C	C	C				23 160	35 120		
28	41 120	41 120	66 120	66 110	47 120	42 120	47 120	48 120	39 120	42 110	39 110	31 110	32 120	33 120	43 120	46 120	35 120	28 120	41 120	31 120	32 120	42 120	24 120	24 120		
29	31 120	29 120	28 120	37 120	40 120	47 120	63 120	63 120	41 120	40 120	39 120	45 110	41 110	40 110	31 110	38 120	32 120	64 120	40 120	36 120 H	41 120	68 120	58 120	38 120		
30	30 120	34 120	33 120	37 120	34 120	45 110	42 120	40 110	42 120	62 110	66 110	53 110	48 110 H	44 110	68 110	44 120	31 120	66 120	67 120	48 120 H	30 120	29 120	31 120	30 120		
31	33 120 H	28 110	24 110	28 120	(44) 120	41 120	45 100	57 110	44 110	31 110	38 100	40 100	39 120	35 110	51 (100)	29 120	29 120	55 120 H	48 120	39 120	35 110	31 120	40 110	30 120		
Sum																										
Mean[1]																										
Mean[2]																										
Median																										

[1] For all days of the month [2] For quiet days

TABLE 54

IONOSPHERE DATA-9

RESTRICTED

Washington, D. C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of F2-M1500 for December 1944
(Month)

Records measured by: S.M.O.
J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	(1.90)F	(2.10)F	(2.11)F	(2.11)F	(2.12)F	(2.28)F	(2.19)F	2.10F	2.33	2.31	2.34	(2.22)	2.2	[illegible]	2.18	C	2.37	2.25	2.27F	(2.24)F	(2.22)F	(1.92)F	(1.94)F	(2.10)F	49.83	
2	(2.11)F	(2.14)F	(2.03)F	(2.19)F	(2.10)F	(2.00)F	AF	(2.11)F	2.30	2.30	2.32	2 [illegible]	2.21	2.02	2.08	2.31	[illegible]	2.46	(2.06)F	(2.30)F	(2.26)F	F	(1.90)F	(2.06)F	47.79	
3	(2.09)F	(2.30)F	(2.01)F	(2.05)F	F	(2.03)F	2.15	2.37	2.43	2.30	2.4	2.27	2.12	2.16	2.29	[illegible]	[illegible]	2.37	(2.11)F	(2.06)F	(2.10)F	(2.11)FA	(2.18)FA	(2.00)FA	50.72	
4	F	(2.11)F	(2.06)F	(2.00)F	(2.12)F	(2.44)F	(2.45)F	(2.22)F	(2.50)F	2.55	2.38	2.45	2.27	C	2.46	2.34	2.34	(2.34)F	(2.22)F	(2.20)F	(2.40)F	(2.02)F	F	F	45.93	
5	(2.20)F	(2.15)F	(2.00)F	(1.94)F	(2.15)F	(2.30)F	(2.04)F	(2.38)F	2.42	2.47	(2.50)	(2.00)	(2.35)	C	[illegible]	2.35	2.32	2.48	[illegible]	[illegible]	[illegible]	[illegible]	(2.08)F	(1.94)F	48.57	
6	(1.90)F	(2.05)F	(1.97)F	(2.21)F	(2.31)F	(2.14)F	(2.12)F	(2.22)F	2.40	2.39	2.60	2.30	2.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.23F	2.22	(2.01)F	(2.13)F	53.59	
7	(2.02)F	(2.30)F	(2.03)F	(2.13)F	(2.21)F	(2.23)F	(2.20)F	(2.37)F	2.49	2.46	2.44	(2.30)	(2.40)	2.24	2.28	2.58	2.1	(2.32)	(2.30)F	(2.26)F	(2.07)F	(2.07)F	(2.24)F	(1.89)F	54.04	
8	(2.18)F	(2.10)F	(1.96)F	(2.12)F	(2.10)F	(2.37)F	(2.06)F	(2.20)F	2.38	2.44	2.33	2.30	2.17	2.22	(2.40)	2.40	(2.32)F	2.45	(2.11)F	(2.23)F	(2.19)F	(2.10)F	(2.01)F	(2.01)F	53.12	
9	(2.11)F	(2.10)F	(2.14)F	(2.10)F	(2.11)F	2.17	2.20	(2.30)	(2.28)	(2.41)	2.31	2.40	(2.20)	2.2 [illegible]	2.18	2.30	2.24	2.33	2.24F	2.18	2.24	(2.01)F	(2.04)F	(1.98)F	52.78	
10	(1.96)F	2.03F	(2.00)F	(2.07)F	(2.08)F	(2.17)F	(2.05)F	(2.20)F	(2.43)	2.60	2.09	(2.42)	(2.21)	(2.37)	2.26	[illegible]	[illegible]	[illegible]	(2.22)F	(2.26)F	2.15F	(2.17)F	(1.92)	(1.9[illegible]	52.41	
11	(1.99)F	(2.00)F	(1.90)F	(2.19)F	(2.19)F	(2.23)F	(2.24)F	(2.22)	2.51	(2.50)	2.66	(2.56)	(2.32)	(2.17)	(2.30)F	2.30	[illegible]	2.31	(1.89)F	(2.37)F	(2.1[illegible]F	(2.05)F	(2.19F	[illegible]98)F	53.52	
12	(1.93)F	(2.00)F	(2.10)F	2.08	(2.17)F	(2.33)F	(2.29)F	(2.22)F	2.43	(2.40)	C	(2.11)	(2.49)	2.45	2.44	2.52	[illegible]	2.40	2.30	2.27	1.98	(2.10)F	(1.99)F	(1.89)F	51.34	
13	1.96F	1.88F	(1.92)F	1.99	2.14F	2.30	(2.11)F	2.24F	2.45	2.47	2.22	2.22	2.18	2 [illegible]	2.20	(2.33)	[illegible]	2.35	2.01	2.21	2.00	2.04	2.09F	(2.05)F	51.40	
14	(1.92)F	(2.03)F	F	(2.00)F	F	(2.22)F	(2.10)F	(2.15)F	(2.19)	2.30	C	C	C	2 [illegible]	2.27	2.45	2.27	2.31	2.05F	2.13	2.16F	(2.02)F	AF	(2.10)F	38.75	
15	A	(1.98)F	(2.13)F	(2.20)F	(1.98)F	(2.11)F	(1.94)F	(2.09)F	2.33	(2.37)	2.24	2.09	2.30	2.32	C	2.34	(2.2[illegible]	(2.21)F	(2.06)F	(2.20)F	A	(2.00)F	(1.98)F	(2.16)F	45.23	
16	(2.06)F	(1.90)F	(1.95)F	(1.90)F	(1.90)F	(2.14)F	(1.98.F	(1.94)FK	(1.95)FK	GK	CK	CK	C K	GK	2.00K	2.00K	[illegible]K	1.72K	1.74FK	1.85FK	(1.97)FK	(2.11)FK	(2.02)FK	(1.84)FK	37.13	
17	(1.92)FK	(1.85)FK	(1.80)FK	(2.00)FK	(2.10)FK	(1.99)FK	AFK	(1.99)FK	2.38K	2.20K	2.30K	2.07K	(2.14)K	2.01K	2.07K	2.25K	(2.23)K	(2.13)K	2.01FK	(2.10)FK	(1.98)FK	(1.85)FK	(2.11)FK	(1.98)K	47.46	
18	AK	(1.95)FK	(1.93)FK	FK	FK	(2.11)FK	AFK	(2.10)FK	(2.30)F	A	2.29	C	C	2.28	2.27	2.33	[illegible]	2.42	2.28	(2.35)F	A	A	(1.93)	(2.08)F	32.82	
19	(1.94)F	A	(2.00)F	(2.06)F	(2.10)F	(2.11)F	(2.03)F	(2.13)F	(2.43)F	(2.49)	(2.27)	2 [illegible]	2.30	2.35	C	(2.30)	2.42	2.31	2.36	2.20F	(2.21)F	A	A	A	42.11	
20	(1.87)F	(2.00)F	(2.00)F	(2.01)F	(1.98)F	(2.11)F	(2.48)F	2.10	2.45	2.37	(2.14)	2.2[illegible]	2.14	C	2.12	2.17	2.17	2.37	2.04	2.19	2.12	(2.01)F	(2.00)F	(1.80)F	48.93	
21	(1.85)F	(2.00)F	(2.10)F	(2.04)	A	A	A	2.17	2.40	2.40	C	C	(2.30)	(2.29)	2.14	(2.47)	(2.30)	2.30	2.21	(2.49)F	(2.27)F	1.88	A	(1.92)	39.53	
22	1.94F	1.98F	(2.10)F	(2.10)F	(1.95)F	(2.12)F	2.13F	(2.01)F	2.48	2.18	2.12	(2.20)	2.30	2.28	(2.31)	2.20	2.22	2.28	2.08	(2.08)F	(2.22)F	(2.01)F	(1.98)F	(2.01)F	51.28	
23	(2.00)F	(2.10)F	(1.97)F	(2.09)F	(2.16)F	2.09	2.29	(2.14)F	(2.36)	2.58	(2.10)	2.15	(2.42)	2.34	2.24	2.29	2.38	2.34	2.19	2.19	(2.17)F	(1.95)F	(1.95)F	(1.90)F	52.38	
24	(2.01)F	(1.99)F	(2.01)F	(2.03)F	(2.05)F	2.11	2.21	(2.30)F	2.30	2.50	(2.33)	(2.29)	(2.21)	2.05	2.17	2.26	2.29	2.30	2.35	2.12	(2.19)F	1.97F	1.98F	(2.00)F	52.02	
25	(1.81)F	(2.00)F	(2.02)F	(2.22)F	2.11F	2.03	2.15	(2.07)F	(2.24)	2.35	(2.14)	(2.20)	2.4[illegible]	(2.21)	2.19	2.31	2.27	2.21	2.25F	(2.28)F	(2.11)F	(1.88)F	(2.00)F	J	49.46	
26	(1.90)F	(2.04)F	(2.07)F	(2.13)F	(2.20)F	(2.12)F	(2.44)F	(2.14)F	(2.23)	(2.27)	(2.19)	2.22	(2.19)	2.12	2.25	2.11	2.24	2.22	2.12	2.27	A	(1.90)F	(2.00)F	(2.04)F	49.32	
27	(1.95)F	(1.88)F	(2.07)F	(2.00)	(2.27)F	2.11F	(1.87)F	1.90F	2.24M	(1.92)	1.73A	1.85K	1.84K	2.0K	2.10K	1.98K	CK	CK	C K	(2.02)K	(2.10)K	(1.73)FK	(1.90)FK	CK	39.76	
28	AK	(2.06)F	AK	(2.03)FK	(1.96)FK	(2.00)FK	(2.00)FK	(1.80)FK	(2.04)	(2.08)	(2.12)	2.30	(2.20)	(2.20)	2.38	2.37	2.41	2.22	2.45	2.20	2.39	(2.20)F	1.95F	(2.01)F	47.37	
29	(1.95)	1.98F	(2.07)F	(2.05)F	(2.15)F	(2.20)F	AF	(2.10)F	2.45	2.40	2.12	(2.38)	(2.34)	2.33	2.31	2.28	2.29	2.42	2.42	(2.32)F	(2.07)F	(2.02)	(1.95)F	(1.86)F	50.46	
30	1.98F	(2.10)F	(2.09)F	(2.38)F	(2.41)F	(1.99)F	(1.92)F	(2.10)F	(2.26)	2.42	(2.21)	(2.34)	(2.32)	2.35	A	2.23	2.30	2.32	(2.20)F	(2.50)F	(1.95)F	(2.01)F	(2.11)F	(1.94)F	50.43	
31	(2.06)F	(1.95)F	(2.04)F	(2.10)F	(2.30)F	(2.07)F	(2.02)F	(2.03)F	2.47	2.0[illegible]	2.08	2.26	2.22	2.30	2.26	2.47	2.40	2.30	(2.30)F	(2.02)F	(2.00)F	(1.95)F	(2.13)F	(2.03)F	52.36	
Sum	53.51	61.11	58.58	62.52	57.42	64.91	55.56	66.13	72.85	0.873	61.06	60.45	62.94	60.11	60.57	69.13	68.99	69.47	65.16	68.22	60.06	56.28	54.47	53.61	149.184	
Mean[1]	1.98	2.04	2.02	2.08	2.13	2.16	2.14	2.13	2.35	2.37	2.26	2.24	2.25	2.23	2.24	2.30	2.30	2.32	2.17	2.20	2.14	2.01	2.02	1.98		
Mean[2]	1.98	2.05	2.03	2.09	2.13	2.18	2.14	2.16	2.36	2.38	2.27	2.26	2.27	2.24	2.27	[illegible]	2.31	2.34	2.19	2.22	2.16	2.02	2.02	1.99		
Median	1.96	2.02	2.02	2.08	2.12	2.13	2.12	2.1[illegible]	2.38	2.40	2.27	2.26	2.22	2.22	2.26	2.30	2.29	2.32	2.20	2.20	2.16	2.02	2.00	2.00		

[1] For all days of the month [2] For quiet days

TABLE 55

IONOSPHERE DATA-10

RESTRICTED

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of F2-M3000 for December (Month) 1944

Records measured by: S. M. O.
J. T. D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	(2.87)F	3.05F	(3.09)F	(3.06)F	3.05)F	3.29F	(3.23)F	3.10F	3.41	3.36	3.40	(3.34)	3.26	3.11	3.22	C	3.42	3.31	3.19)F	3.30)F	3.24F	2.91F	2.94F	3.1-F	73.-2	
2	3.01F	3.13F	(3.06)F	(3.18)F	3.17F	(2.95)F	AF	(3.15)F	3.40	3.32	3.35	3.22	3.22	3.25	3.20	3.40	3.30	3.55	(3.05)F	(3.36)F	3.28)F	F	(2.82)F	3.16F	74.29	
3	(3.00)F	3.21F	(3.00)F	3.08)F	F	(3.10)F	3.20	3.44	3.52	(3.33)	3.54	3.30	3.17	3.22	(3.26)	(3.38)	3.55	3.45	(3.20)F	(3.08)F	3.11)F	(3.22)F A	3.39 F A	2.98 F A	74.73	
4	F	(3.20F	(3.12)F	(3.10)F	(3.12)F	3.55)F	(3.43)F	(3.23)F	(3.60)F	3.65	3.41	3.55	3.30	C	3.53	3.40	3.40	(3.38)F	(3.24)F	(3.21)F	(3.46)F	2.96)F	F	F	66.42	
5	3.25F	3.24F	(3.08)F	(3.86)F	(3.20F	(3.35)F	(3.02)F	(3.40)F	3.50	3.59	(3.60)	(2.99)	(3.44)	C	C	3.41	(3.43)	3.54	(3.15)F	(3.20)F	3.20)F	3.61)F	(3.08)F	2.88)F	71.22	
6	2.79)F	3.06.F	(2.97)F	(3.21)F	(3.30)F	(3.0.F	(3.05)F	(3.29)F	3.45	3.45	3.72	3.34	3.20	(3.47)	3.39	3.38	(3.72)	(3.57)	3.19)F	3.00)	(3.25)F	3.30	3.03F	(3.20)F	78.37	
7	(3.00)F	3.36\F	2.98)F	3.18)F	(3.22)F	(3.30F	(3.20)F	(3.44F	3.61	3.50	3.50	(3.34)	(3.49)	3.41	3.34	3.60	3.11	3.41)	3.32)F	(3.28)F	(3.10)F	(3.08F	(3.30)F	(2.82)F	78.89	
8	3.20)F	3.00\F	2.94)F	3.14)F	(3.11)F	(3.30)F	(3.10)F	(3.29)F	3.43	3.52	3.41	3.35	3.20	3.29	(3.43)	3.51	(3.35)F	3.50	(3.15)F	(3.25)F	(3.20)F	(3.12)F	3.00)F	(3.02)F	77.8	
9	(3.11)F	3.17)F	(3.20)F	(3.14)F	(3.11)F	3.21	3.25	3.39)	(3.35)	(3.45	3.39	(3.45)	(3.23)	3.29	3.28	3.35	3.30	3.43	3.29F	3.27	3.30	(3.00)F	(3.1-F	3.00)F	78.16	
10	2.96.F	3.06F	(3.10)F	(3.10F	(3.13)F	(3.19F	(3.10)F	(3.25F	(3.50)	3.66	(3.14)	(3.45)	(3.29)	(3.44)	3.35	(3.30)	(3.30)F	3.40	3.25)F	(3.30)F	(3.17)F	3.07)F	(2.89	(2.87)	77.77	
11	3.05\F	(3.05\F	2.89)F	(3.30)F	(3.20)F	(3.27)F	(3.30)F	(3.26)F	3.63	(3.60)	3.70	(3.68)	(3.40)	(3.19)	(3.30)F	3.35	3.49	3.38	(2.80)F	(3.43)F	(3.17)F	(3.00)F	(3.1-F	2.93)F	78.48	
12	(2.90)F	3.00)F	(3.20)F	(3.5	(3.20)F	(3.46)F	(3.30)F	(3.30)F	3.55	(3.48)	C	(3.18)	(3.62)	3.52	3.49	3.58	3.48	3.49	3.37	3.25	2.95	(3.10)F	3.00)F	2.83)F	75.40	
13	2.98F	2.85F	2.91)F	3.01	3.19F	3.34	(3.16)F	(3.05)F	3.45	3.54	3.21	3.25	3.25	3.01	3.25	(3.42)	3.26	3.41	3.06	3.29	3.02	3.08	3.16F	(3.07)F	76.16	
14	(2.93)F	(3.10)F	F	3.02F	F	(3.11)F	(3.10)F	(3.08)F	(3.25)	3.40	C	C	C	3.20	3.39	3.51	3.38	3.34	3.11	3.20	3.17F	(3.02F	AF	(3.15)F	57.46	
15	A	2.95)F	(3.13)F	3.28)F	(2.98)F	3.10F	(2.88)F	(3.10)F	3.45	(3.48)	3.28	3.10	3.32	3.40	C	3.45	(3.23)	3.28)F	(3.16)F	(3.28)F	A	(3.04)F	(3.00)F	(3.20)F	67.09	
16	(3.12)F	2.80)F	(2.95)F	2.87)F	(2.88)F	(3.1)F	(3.00)F	(2.89)F K	(2.91)F K	G K	C K	C K	C K	G K	3.00 K	(2.90)K	(2.90)F K	2.90 K	2.60 F K	2.80 F K	(2.92)F K	(3.15)F K	(3.18)F K	2.79)F K	55.57	
17	(2.91)F K	2.79 F K	2.71 F K	2.97)F K	3.10)F K	(3.05)F K	AF K	(2.99)F K	3.47 K	3.25 K	3.37 K	3.14 K	(3.22)K	3.04 K	3.10 K	3.34 K	(3.21)K	(3.16)K	3.01 F K	3.15)F K	(2.97)F K	2.71 F K	(3.23 F K	(3.05)F K	70.92	
18	A K	2.98 F K	(2.97)F K	F K	F K	(3.17)F K	AF K	(3.17 F K	3.35)F	A	3.31	C	C	3.31	3.30	(3.40)	3.26	3.47	3.35	(3.42)F	A	A	(2.88)	(3.10)F	48.44	
19	(2.95)F	A	3.02)F	3.05\F	(3.21)F	3.15)F	(3.05)F	(3.12)F	(3.55)F	(3.55)	(3.33)	3.11	3.38	3.45	C	(3.40)	3.50	3.37	3.44	3.26 F	(3.21)F	A	A	A	62.04	
20	(2.97)F	3.10)F	(3.02)F	(3.00)F	3.00.F	(3.14)F	(3.50)F	3.11	3.46	3.47	(3.20)	3.37	3.30	C	3.16	3.31	3.22	3.40	3.08	3.25	3.20	(3.01)F	(3.04)F	(2.71)F	72.82	
21	2.80)F	(3.01)F	(3.14)F	3.38)	A	A	A	3.19	3.50	3.46	C	C	(3.35)	(3.35)	3.22	(3.00	3.85)	3.32	3.24	(3.47F	(3.34)F	2.80	A	(2.90)	58.62	
22	2.94F	2.99F	(3.07)F	3.14)F	(2.91)F	(3.17)F	3.20F	(3.01)F	3.60	3.20	3.12	(3.30)	3.25	3.30	(3.35)	3.25	3.22	3.35	3.11	(3.11)F	(3.30)F	(3.00)F	(2.99)F	(3.00)F	75.88	
23	(3.00)F	(3.14)F	(2.99)F	3.15)F	(3.21)F	3.15	3.33	(3.20)F	(3.40)	3.60	(3.10)	3.19	(3.45)	3.42	3.31	3.31	3.41	3.40	3.24	3.23	(3.17)F	2.90)F	(2.90)F	2.83 F	76.98	
24	(3.05)F	(3.00)F	(3.20)F	(3.01)F	(3.05)F	3.10	3.29	(3.35)F	3.35	3.60	(3.42)	(3.40)	(3.28)	3.06	3.20	3.31	3.34	3.36	3.40	3.19	(3.21)F	2.98 F	2.95F	(3.00)F	77.10	
25	2.81)F	3.10)F	(3.08)F	3.28)F	3.17 F	3.10	3.15	(3.05)F	(3.24)	3.45	(3.20)	(3.30)	3.46	(3.22)	3.20	3.40	3.35	3.28	3.30	(3.33)F	(3.09)F	(2.82)F	(3.05)F	J	73.43	
26	(2.84)F	(3.10)F	3.08)F	(3.22)F	(3.24)F	(3.17)F	(3.45)	(3.20)F	(3.45)	(3.31)	(3.14)	3.30	(3.20)	3.15	3.31	3.15	3.30	3.26	3.15	3.35	A	2.89)F	(2.98)F	(3.05)F	73.29	
27	(2.90)F	2.87)F	(3.10)F	3.00)	(3.35)F	3.18F	(2.82)F	2.85F	(3.30)H	(2.87)	2.90 K	2.80 K	2.80 K	3.10 K	3.17 K	2.95 K	C K	C K	C K	(3.10)K	(3.14)K	(2.63)F K	(2.89)F K	C K	59.72	
28	A K	(3.01)F K	A K	3.05)F K	(2.90)F K	(3.00)F K	(3.01)F K	(2.80)F K	(3.06)	(3.10)	(3.19)	3.30	(3.20)	(3.30)	3.30	3.43	3.41	3.29	3.48	3.22	3.40	(3.15)F	2.97F	(3.03)F	69.60	
29	3.00F	3.01F	(3.12)F	(3.10)F	(3.18)F	(3.25)F	AF	(3.13)F	3.50	3.48	3.16	(3.45)	(3.43)	3.45	3.41	3.35	3.34	3.50	3.50	(3.35)F	(3.04)F	(3.08)	(2.90)F	(2.82)F	74.55	
30	2.97F	3.11)F	(3.10)F	3.41)F	(3.41)F	2.90)F	(2.90)F	(3.13)F	(3.34)	3.48	(3.29)	(3.41)	(3.40)	3.40	A	3.28	3.30	3.41	3.27)F	(3.61)F	(2.88)F	(3.00)F	(3.14)F	(2.89)F	74.03	
31	(3.07)F	(2.90)F	(3.01)F	(3.14)F	(3.35)F	(3.36)F	(3.00)F	(3.04)F	3.53	3.36	3.14	3.35	3.29	3.32	3.30	3.41	3.46	3.36	(3.33)F	(3.10)F	(3.00)F	(2.88)F	(3.11)F	(3.00)F	76.81	
Sum	80.47	91.29	88.13	93.23	84.94	95.62	82.02	98.00	106.11	99.51	89.52	88.96	92.30	88.47	88.76	100.73	100.79	101.27	96.03	100.58	88.50	83.91	81.83	80.32	2201.29	
Mean[1]	2.98	3.04	3.04	3.11	3.03	3.19	3.15	3.16	3.42	3.43	3.32	3.29	3.30	3.28	3.29	3.36	3.36	3.38	3.20	3.24	3.16	3.00	3.03	2.97		
Mean[2]	2.98	3.06	3.05	3.11	3.04	3.20	3.16	3.19	3.44	3.44	3.33	3.32	3.32	3.29	3.31	3.39	3.38	3.40	3.23	3.27	3.18	3.02	3.03	2.98		
Median	2.97	3.03	3.06	3.10	3.18	3.17	3.16	3.15	3.45	3.47	3.31	3.34	2.28	3.30	3.30	3.39	3.34	3.39	3.21	3.25	3.17	3.00	3.00	3.00		

[1] For all days of the month

[2] For quiet days

TABLE 56

IONOSPHERE DATA-II

RESTRICTED

Washington, D. C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of F2-M3500 for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1	(3.10)F	(3.25)F	(3.30)F	3.30)F	3.32)F	(3.43)F	(3.43)F	3.22F	3.60	3.50	3.54	(3.52)	3.42	3.30	3.36	C	3.53	3.50	(3.34)F	(3.46)F	(3.43)F	(3.11)F	(3.13)F	(3.30)F	77.55	
2	(3.28)F	(3.35)F	(3.41)F	(3.40)F	3.34F	3.20)F	AF	(3.39)F	3.55	3.49	3.50	3.40	3.43	3.27	3.43	3.60	3.48	3.69	(3.29)F	(3.50)F	(3.53)F	F	(3.02)F	(3.24)F	74.52	
3	(3.17)F	(3.46)F	(3.25)F	(3.30)F	F	(3.26)F	3.41	3.64	3.67	(3.54)	3.62	3.47	3.36	3.40	(3.44)	(3.50)	3.68	3.58	(3.34)F	(3.29)F	(3.29)F	(3.58)AF	(3.56)AF	(3.15)AF	78.82	
4	F	(3.40)F	(3.30)F	(3.36)F	(3.32)F	(3.71)F	(3.60)F	(3.43)F	(3.76)F	3.80	3.54	3.62	3.46	C	3.70	3.58	3.53	(3.50)F	(3.40)F	(3.47)F	(3.66)F	(3.16)F	F	F	70.22	
5	(3.45)F	(3.45)F	(3.32)F	3.13)F	3.46)F	(3.47)F	(3.28)F	(3.60)F	3.70	3.72	(3.75)	(3.14)	(3.62)	C	C	3.59	(3.56)	3.67	(3.30)F	(3.32)F	(3.48)F	(3.24)F	(3.32)F	(3.06)F	75.65	
6	(3.00)F	(3.22)F	(3.15)F	(3.47)F	(3.47)F	(3.38)F	(3.23)F	(3.50)F	3.61	3.60	3.85	3.49	3.40	(3.60)	3.51	3.55	(3.35)	(3.75)	(3.40)F	(3.17)	(3.42)F	3.44	3.25)F	(3.39)F	82.70	
7	(3.17)F	(3.58)F	(3.28)F	(3.33)F	(3.43)F	(3.47)F	(3.40)F	(3.66)F	3.74	3.65	3.70	(3.45)	(3.70)	3.54	3.47	3.77	3.27	(3.53)	(3.50)F	(3.43)F	(3.29)F	(3.24)F	(3.48)F	(3.04)F	83.16	
8	(3.33)F	3.22)F	3.18)F	(3.34)F	(3.30)F	(3.50)F	(3.31)F	(3.42)F	3.55	3.70	3.58	3.47	3.40	3.45	(3.61)	3.68	(3.54)F	3.75	(3.31)F	(3.48)F	(3.40)F	(3.37)F	(3.25)F	(3.24)F	82.39	
9	3.36)F	3.34)F	(3.39)F	(3.31)F	(3.37)F	3.42	3.42	(3.52)	(3.48)	(3.53)	3.53	(3.70)	(3.41)	3.49	3.42	3.49	3.42	3.54	3.4)F	3.40	3.50	(3.21)F	(3.27)F	(3.17)F	82.56	
10	(2.16)F	3.24)F	(3.21)F	(3.27)F	3.35)F	(3.42)F	(3.28)F	(3.48)F	(3.66)	3.82	(3.31)	(3.65)	(3.42)	(3.58)	3.50	(3.48)	(3.44)F	3.55	(3.45)F	(3.47)F	(3.30)F	(3.26)F	(3.08)F	(3.03)F	81.44	
11	(3.19)F	(3.29)F	(3.12)F	(3.43)F	(3.41)F	(3.49)F	(3.50)F	(3.45)F	3.80	(3.73)	3.83	(3.82)	(3.56)	(3.31)	(3.47)F	3.50	3.66	3.52	(3.02)F	(3.60)F	(3.39)F	(3.21)F	(3.27)F	(3.19)F	82.74	
12	(3.07)F	(3.29)F	(3.36)F	3.31	(3.35)F	(3.57)F	(3.50)F	(3.48)F	3.70	(3.64)	C	(3.33)	(3.74)	3.69	3.61	3.75	3.58	3.61	3.50	3.49	3.15	(3.35)F	(3.22)F	(3.10)F	77.30	
13	3.19F	3.05F	(3.14)F	3.23	3.35F	3.49	(3.32)F	(3.27)F	3.60	3.71	3.42	3.47	3.40	3.18	3.40	(3.58)	3.48	3.56	3.22	3.43	3.19	3.22	3.38F	(3.25)F	83.62	
14	(2.17)F	(3.39)F	F	(3.33)F	F	(3.29)F	(3.22)F	(3.24)F	(3.44)	3.55	C	C	C	3.40	3.51	3.60	3.52	3.47	3.39	3.39	3.40	(3.24)F	AF	(3.35)F	66.82	
15	A	3.18)F	(3.32)F	(3.44)F	(3.13)F	(3.24)F	(3.04)F	(3.26)F	3.01	(3.64)	3.42	3.25	3.49	3.53	C	3.62	(3.38)F	(3.42)F	(3.3)F	(3.42)F	17	(3.21)F	(3.19)F	(3.42)F	73.55	
16	(3.39)F	(3.07)F	(3.17)F	(3.07)F	(3.11)F	(3.36)F	(3.21)F	(3.12)F	(3.18)FK	G K	C K	C K	C K	G K	3.26K	(3.08)K	(3.10)FK	3.14K	3.25FK	3.02FK	(3.11)FK	(3.31)FK	(3.27)FK	(2.94)FK	59.04	
17	(3.15)FK	2.99)FK	(2.94)FK	(3.19)FK	(3.32)FK	(3.21)FK	AF K	(3.22)FK	3.63K	3.44K	3.50K	3.33K	(3.43)K	3.22K	3.24K	3.48K	(3.40)K	(3.31)K	3.21FK	(3.31)FK	(3.13)FK	2.77)FK	(3.43)FK	(3.21)FK	75.29	
18	A K	3.16)FK	(3.11)FK	F K	F K	(3.40)FK	HF K	(3.39)FK	(3.44)F	H	3.48	C	C	3.49	3.43	(3.54)	3.45	3.60	3.49	(3.02)F	H	F	(3.10)F	(3.32)F	57.13	
19	(3.19)F	A	3.24)F	(3.29)F	(3.41)F	(3.34)F	(3.24)F	(3.40)F	(3.71)F	(3.71)	(3.50)	3.31	3.50	3.61	C	(3.53)	3.70	3.55	3.58	3.43	(3.40)F	H	F	A	65.57	
20	(3.17)F	(3.26)F	(3.24)F	(3.20)F	(3.18)F	(3.36)F	(3.70)F	3.30	3.60	3.60	(3.40)	3.54	3.40	C	3.34	3.36	3.42	3.59	3.22	3.43	3.37	(3.23)F	(3.22)F	(2.92)F	71.31	
21	(3.33)F	(3.21)F	(3.25)F	(3.28)	A	A	A	3.40	3.68	3.61	C	C	(3.50)	(3.50)	3.37	(3.75)	(3.50)	3.47	3.4	(3.7)F	(3.4)F	3.63	F	3.54)	61.30	
22	3.15F	3.14F	(3.30)F	(3.36)F	3.12)F	3.35)F	3.35F	(3.25)F	3.72	3.34	3.29	(3.49)	3.50	3.42	(3.50)	3.42	3.42	3.49	3.25	(3.25)F	(3.4)F	(3.21)F	(3.16)F	(3.20)F	80.10	
23	(3.17)F	(3.39)F	(3.15)F	(3.28)F	(3.44)F	3.30	3.44	(3.40)F	(3.55)F	3.75	(3.30)	3.30	(3.61)	3.56	3.48	3.47	3.53	3.54	3.41	3.40	3.42F	(3.10)F	(3.16)F	(3.03)F	81.15	
24	(3.25)F	(3.20)F	(3.40)F	(3.20)F	(3.29)F	3.34	3.45	(3.54)F	3.45	3.71	(3.6)F	(3.54)	(3.43)	3.24	3.49	3.44	3.4	3.50	3.53	3.34	(3.4)F	3.12F	3.11F	(3.20)F	81.21	
25	3.02)F	(3.23)F	(3.23)F	(3.47)F	3.32F	3.28	3.35	(3.24)F	(3.43)	3.58	(3.40)	(3.50)	3.60	(3.40)	3.41	3.54	3.50	3.48	3.46	(3.50)F	(3.39)F	(3.00)F	(3.23)F	F	77.47	
26	(3.04)F	(3.25)F	(3.20)F	(3.46)F	(3.43)F	(3.34)F	(3.61)F	(3.40)F	(3.60)F	(3.50)	(3.40)	3.47	(3.38)	3.36	3.47	3.35	3.46	3.44	3.30	3.50	F	(3.17)F	(3.14)F	(3.13)F	77.55	
27	(3.11)F	(3.06)F	(3.30)F	(3.29)F	(3.49)F	3.33F	(3.00)F	3.05F	(3.50)F	(3.03)	3.10K	2.98K	3.02K	3.30K	3.31K	3.14K	C K	C K	C K	(3.25)F	(3.34)F	2.38)FK	(3.04)F	C K	68.52	
28	A K	3.20)FK	A K	(3.22)FK	(3.10)FK	(3.20)FK	(3.21)FK	(3.03)FK	(3.19)F	(3.29)F	(3.32)F	3.47	(3.40)F	(3.47)F	3.59	3.60	3.60	3.42	3.64	3.41	3.65	(3.35)F	3.17F	(3.21)F	75.72	
29	(3.19)F	3.20F	(3.31)F	(3.26)F	(3.34)F	(3.45)F	AF	(3.29)F	3.66	3.61	3.34	(3.60)	(3.58)F	3.60	3.55	3.49	3.50	3.66	3.64	3.50)F	3.29)F	(3.27)F	(3.16)F	(3.32)F	75.51	
30	3.17F	(3.20)F	(3.25)F	(3.42)F	(3.60)F	(3.05)F	(3.10)F	(3.30)F	(3.47)	3.62	(3.46)	(3.61)	(3.59)F	3.55F	A	3.42	3.48	3.60	(3.41)F	(3.77)F	(3.10)F	(3.1)F	(3.32)F	(3.07)F	77.94	
31	(3.20)F	(3.11)F	(3.20)F	(3.35)F	(3.50)F	(3.50)F	(3.20)F	(3.28)F	3.70	3.50	3.31	3.52	3.44	3.50	3.44	3.66	3.59	3.50	(3.55)F	(3.2)F	(3.16)F	3.11F	(3.36)F	(3.18)F	81.06	
Sum	85.74	97.22	94.22	99.31	90.21	101.18	87.01	104.13	111.05	103.91	99.97	93.47	97.19	92.76	93.29	105.56	105.06	105.75	101.12	96.03	94.01	89.69	87.16	85.53	2324.70	
Mean[1]	3.18	3.24	3.24	3.21	3.34	3.37	3.35	3.36	3.58	3.58	3.48	3.42	3.47	3.44	3.46	3.52	3.50	3.53	3.37	3.42	3.36	3.20	3.23	3.17		
Mean[2]	3.18	3.25	3.26	3.32	3.35	3.38	3.35	3.38	3.59	3.59	3.49	3.49	3.49	3.46	3.48	3.55	3.52	3.55	3.40	3.44	3.35	3.22	3.22	3.17		
Median	3.19	3.22	3.25	3.30	3.34	3.36	3.34	3.39	3.61	3.61	3.48	3.48	3.44	3.47	3.47	3.54	3.50	3.53	3.40	3.43	3.40	3.21	3.22	3.17		

[1] For all days of the month [2] For quiet days

TABLE 57

IONOSPHERE DATA - 12

RESTRICTED

Washington, D. C. Ionosphere Station
(Location)

National Bureau Of Standards
(Institution)

Hourly values of FI-M3000 for December 1944
(Month)

Records measured by: S.M.O.
J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1											A				3.51	C									3.51	
2										3.72	(3.79)		3.70 H	3.55	(3.49)	3.60									21.50	
3																										
4													H	C												
5													(3.75)	C	C										3.75	
6											(4.00)	(3.90)		H											7.90	
7																										
8															(3.50)										3.50	
9																										
10											A	A	H	(3.79)	(3.80)										7.59	
11													(3.70)												3.70	
12											C		H													
13														(3.75)											3.75	
14											C	C	C													
15											A	A			C											
16										3.25 K	C K	C K	C K	3.88 K	K	K									7.13	
17										K	K	K	K	K	K	K										
18										A		C	C													
19												3.70			C										3.70	
20														C												
21											C	C	H													
22															A											
23													A	(3.80)											3.80	
24															H											
25												(3.68)													3.68	
26										A	A															
27											K	3.30 K	(3.20) K	(3.40) K	K	K									9.90	
28											A				A											
29													H		(3.98)										3.98	
30											A		3.75	(3.85)	A	A									7.60	
31												3.65	A	3.72											7.37	
Sum										6.97	7.79	18.23	18.10	29.64	18.58	3.60									102.91	
Mean[1]										3.48	3.90	3.65	3.62	3.70	3.72	3.60										
Mean[2]										3.72	3.90	3.73	3.72	3.73	3.72	3.60										
Median										3.48	3.90	3.68	3.70	3.76	3.80	3.60										

[1] For all days of the month

[2] For quiet days

TABLE 58

IONOSPHERE DATA - 13

RESTRICTED

Washington, D.C. (Location) Ionosphere Station

National Bureau Of Standards (Institution)

Hourly values of E-MI500 for December (Month) 1944

Records measured by: S.M.O. J.T.D.

TIME: 75° W MERIDIAN

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
1									A	(3.50)	A	(3.68)	A	A	(3.90)	C	(3.70)								17.78	
2									AF	(3.80)	(3.68)	F	A	3.71	(3.70)	A	3.89								18.78	
3									AF	A	A	AF	(3.51)	(3.70)	(3.59)	A	A								10.79	
4									F	(3.46)	(3.50)	3.78	(3.83)	C	A	3.75	(3.80)								22.12	
5									AF	A	(3.70)	(3.74)F	AF	C	C	A	A								7.44	
6									3.63	3.85	A	A	(3.85)	3.94	(3.92)H	FA	A								19.19	
7									A	(3.64)	AF	3.82	(3.80)	A	A	3.78	A								15.04	
8									(3.60)	3.51	(3.62)H	AF	(3.90)	A	A	A	A								14.63	
9									A	(3.50)	A	3.63	A	(3.95)	A	(3.97)	A								15.05	
10									(3.75)	A	A	A	A	(3.88)	A	A	A								7.63	
11									J	A	3.70	(3.50)	(3.82)	A	(3.89)	A	A								14.91	
12									(3.50)	A	C	(3.65)	(3.80)	(3.95)	(3.84)	(3.74)	F								22.48	
13									3.50	3.64	3.80	B	A	A	A	A	A								20.94	
14									A	A	C	C	C	A	A	A	A									
15									F	3.81	A	A	(3.80)	A	C	A	A								7.61	
16									F K	3.70 K	C K	C K	C K	3.75 K	(3.88) K	A K	A K								11.33	
17									A K	A K	3.80 K	3.61 K	(3.72) K	3.50 K	3.80 K	3.82 K	A K								22.25	
18									A	A	3.86	C	C	3.50	(3.88)	A	A								11.18	
19									A	A	A	(3.72)	A	3.83	C	3.47	(3.71)								14.73	
20									(3.20)	A	3.89	3.68	(3.90)	C	3.66	(3.40)	(3.80)								25.03	
21									3.80	A	C	C	(3.80)	3.70	3.85	(3.60)	A								18.75	
22									AF	3.64	(3.70)H	A	A	A	A	A									7.34	
23									(3.82)F	A	(3.70)	A	A	A	A	(3.55)	(3.85)								14.92	
24										A	(3.63)	(3.76)	3.77	C	3.51	(3.71)H	3.61								21.99	
25									(3.50)	3.61	(3.61)	A	A	A	(3.50)	A	A								14.22	
26									(3.80)	A	A	A	A	A	A	A	A								3.80	
27									A	A	B K	(3.62) K	B K	A K	3.90) K	(3.85) K	C K								11.37	
28									A	A	A	3.70	(3.80)	3.70	3.88	A	A								15.28	
29									A	(3.60)H	(3.60)	A	A	3.69	3.75	A	A								15.06	
30									(3.50)H	(3.50)	(3.71)	A	A	A	A	A	(3.47)								14.24	
31									(3.20)	3.70	3.50	3.70	A	(3.67)	3.89	A	(3.90)								25.66	
Sum									72.80	57.82	59.00	57.79	49.24	52.47	62.34	41.14	33.83								447.32	
Mean[1]									3.57	3.66	3.69	3.70	3.79	3.75	3.78	3.74	3.76									
Mean[2]									3.57	3.65	3.68	3.71	3.80	3.77	3.77	3.72	3.76									
Median									3.55	3.64	3.70	3.69	3.80	3.76	3.85	3.75	3.80									

[1] For all days of the month

[2] For quiet days

Table 59

Ionospheric Storminess, December, 1944

Day	Ionospheric Character* 00-12 GCT	12-24 GCT	Principal Storms/ Beginning GCT	End GCT	Magnetic Character** 00-12 GCT	12-24 GCT
December						
1	2	2			1	2
2	0	2			3	3
3	3	2			3	2
4	2	2			2	1
5	3	2			2	1
6	2	3			2	1
7	2	3			1	0
8	3	3			1	1
9	1	3			2	2
10	1	1			1	1
11	1	1			1	1
12	1	2			1	1
13	1	2			2	3
14	1	2			3	1
15	3	2			1	2
16	2	7	1200	—/	4	6
17	4	4	—		4	5
18	4	1	—	1200	4	2
19	3	2			2	1
20	3	1			2	2
21	2	1			2	2
22	2	1			1	2
23	2	2			1	1
24	2	3			1	1
25	3	2			0	0
26	1	2			1	2
27	3	4	1500		4	4
28	4	1		1200	3	2
29	3	0	—		2	1
30	1	1			3	2
31	2	1			1	1

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of American magnetic K-figure, determined by a number of observatories, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

/Dashes indicate continuance of ionospheric storminess.

Table 60. Sudden Ionosphere Disturbances

Observed at Washington, D.C.

Day	GCT Beginning	GCT End	Locations of transmitters	Relative intensity at minimum*	Other phenomena
Dec. 9	1924	2010	Ohio, D.C., New York, England, Mexico, Gold Coast, Hawaii	0.01	Terr.mag.pulse** 1925-2000
10	1914	2020	Ohio, D.C., New York, England, Mexico, Gold Coast, Hawaii, [illegible]	0.0	Terr.mag.pulse** 1913-1955
13	1538	1740	Ohio, D.C., New York, England, Mexico, Chile	0.0	Terr.mag.pulse** 1533-1550
25	1720	1752	Ohio, D.C., Mexico, Brazil	0.2	Terr.mag.pulse** 1720-1755

*Ratio of received field intensity during fadeout to average field intensity before and after, for station W8XAL, 6080 kilocycles, 700 kilometers distant.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

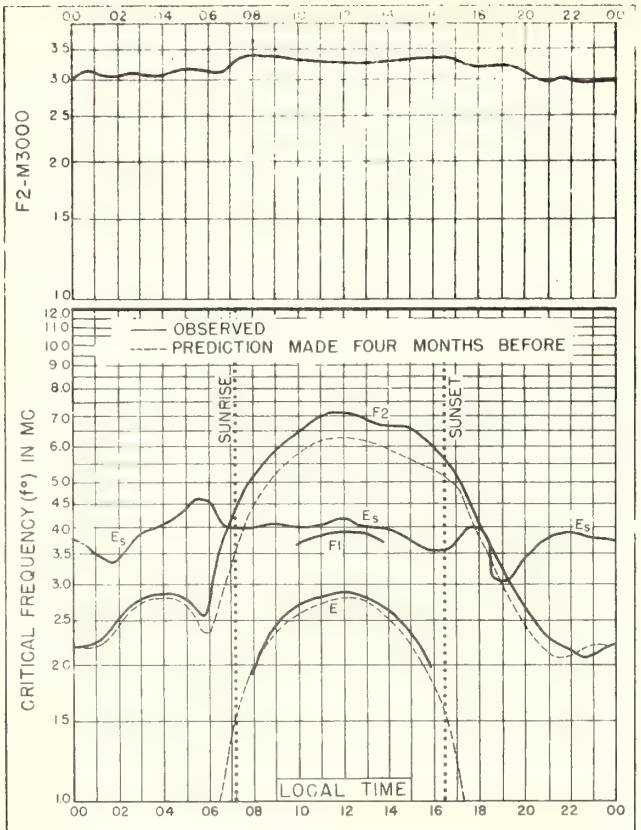


Fig. 1. WASHINGTON, D.C.
39.0° N, 77.5° W DECEMBER, 1944

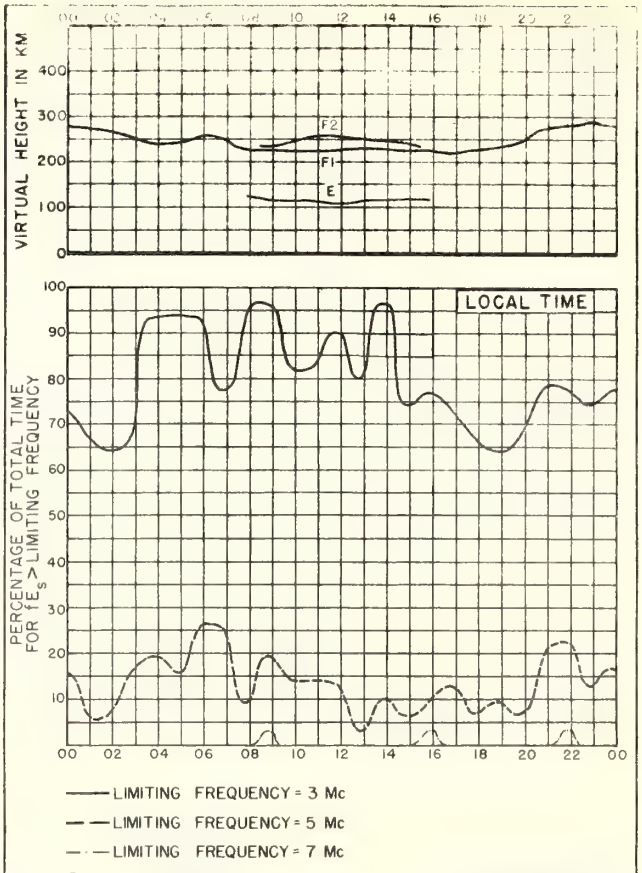


Fig. 2. WASHINGTON, D.C. DECEMBER, 1944

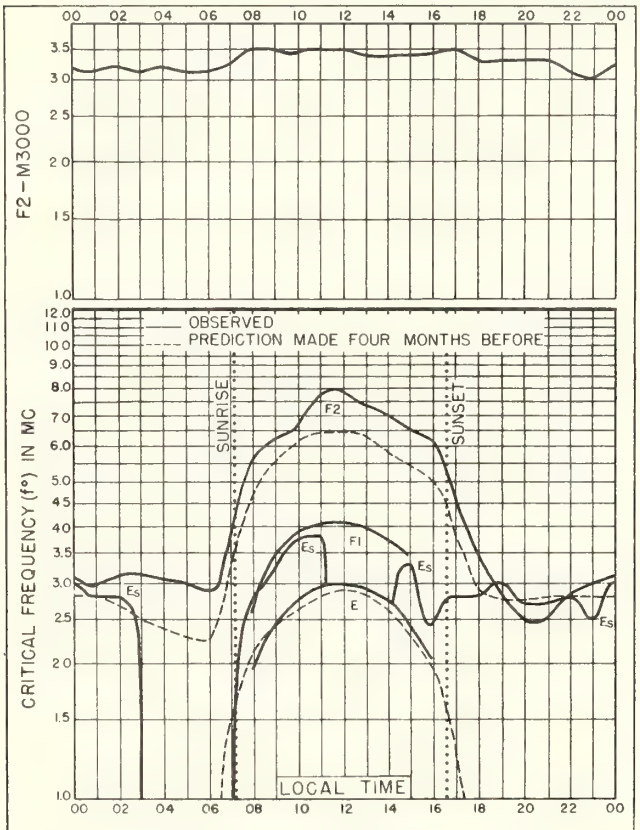


Fig. 3. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W DECEMBER, 1944

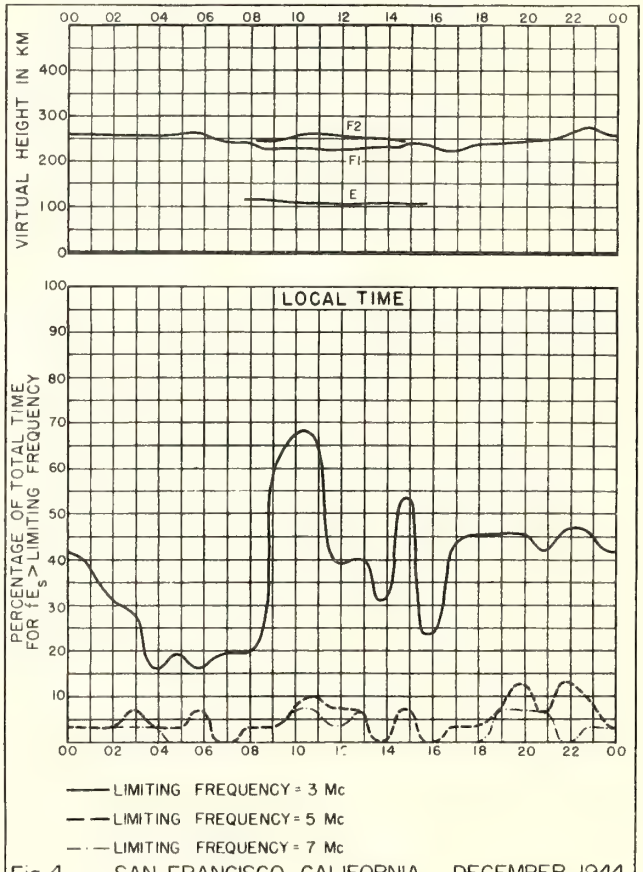


Fig 4. SAN FRANCISCO, CALIFORNIA DECEMBER, 1944

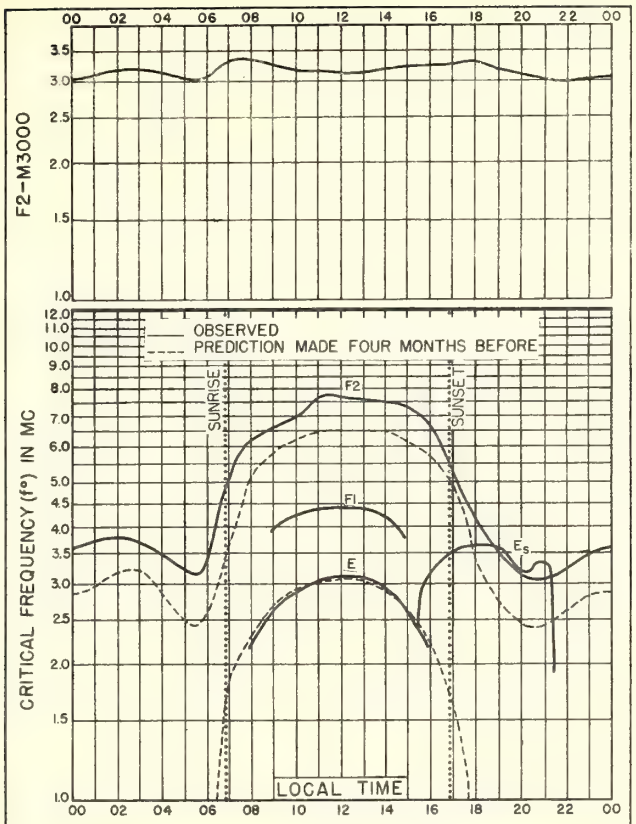


Fig.5. BATON ROUGE, LOUISIANA
30.5°N, 91.2° W DECEMBER, 1944

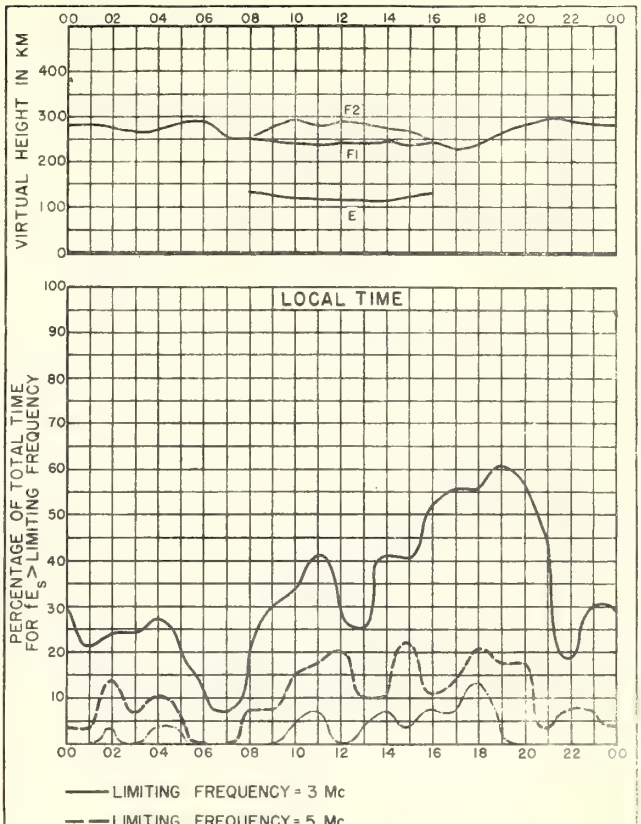


Fig.6. BATON ROUGE, LOUISIANA DECEMBER, 1944

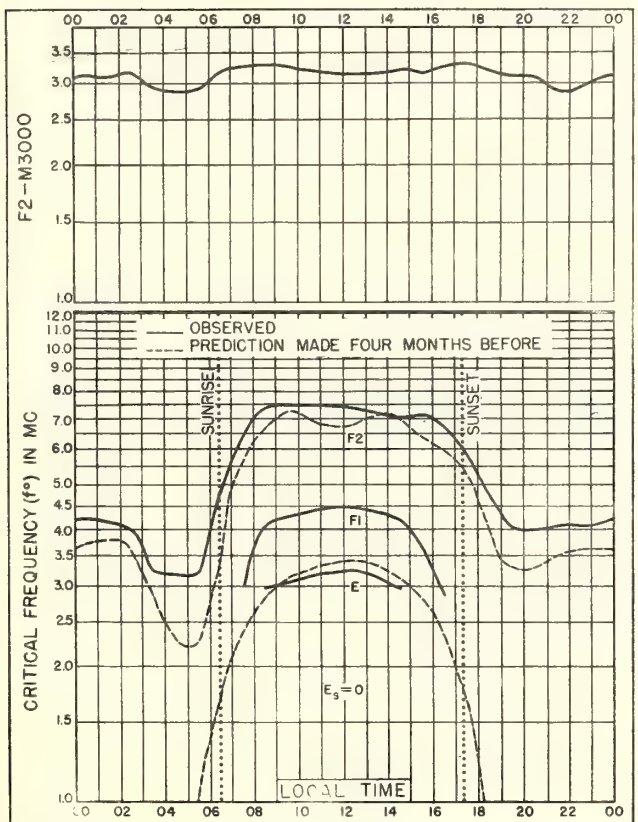


Fig.7. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W DECEMBER, 1944

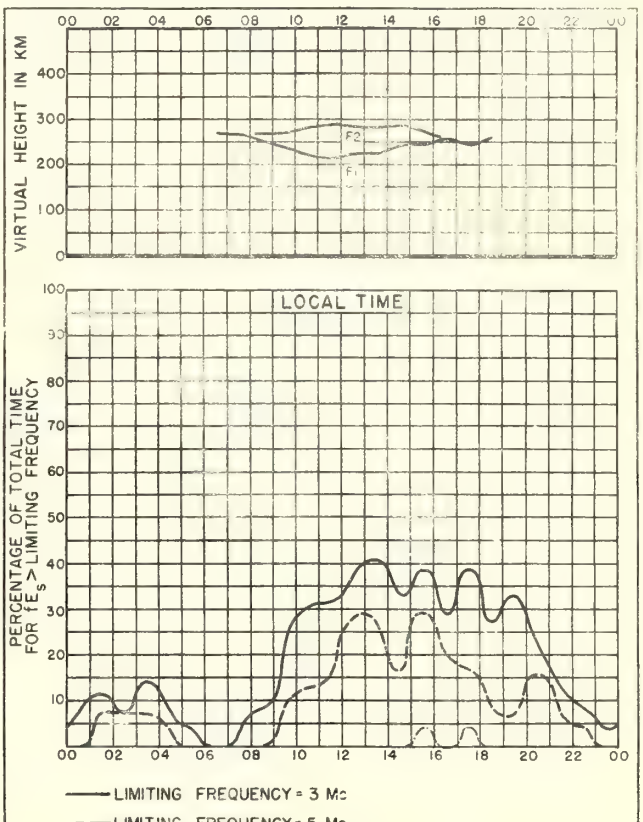


Fig.8. SAN JUAN, PUERTO RICO DECEMBER, 1944

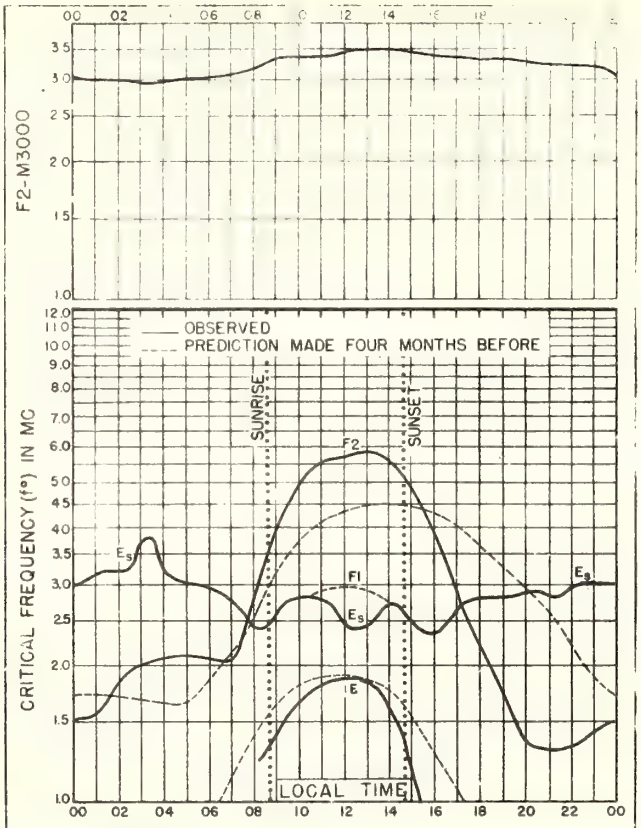


Fig. 9. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER, 1944

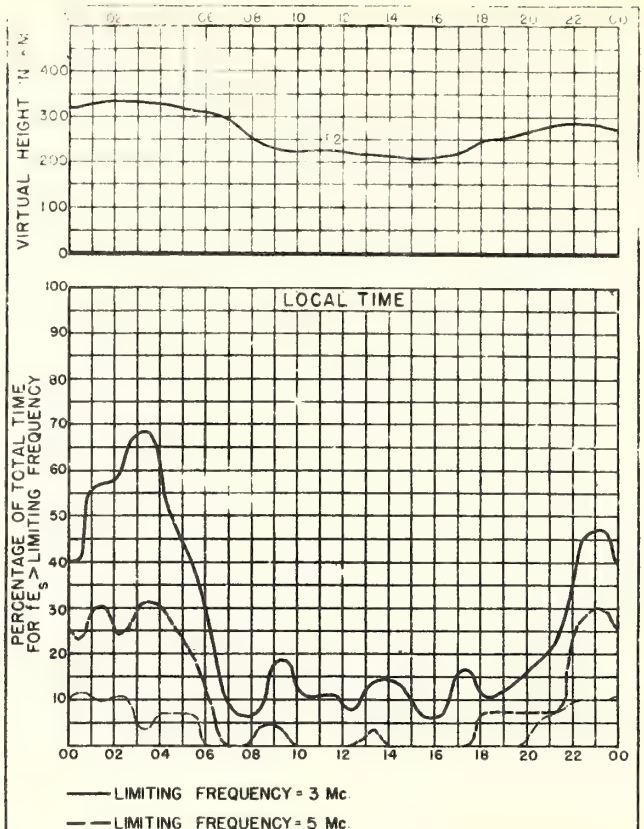


Fig. 10. FAIRBANKS, ALASKA NOVEMBER, 1944

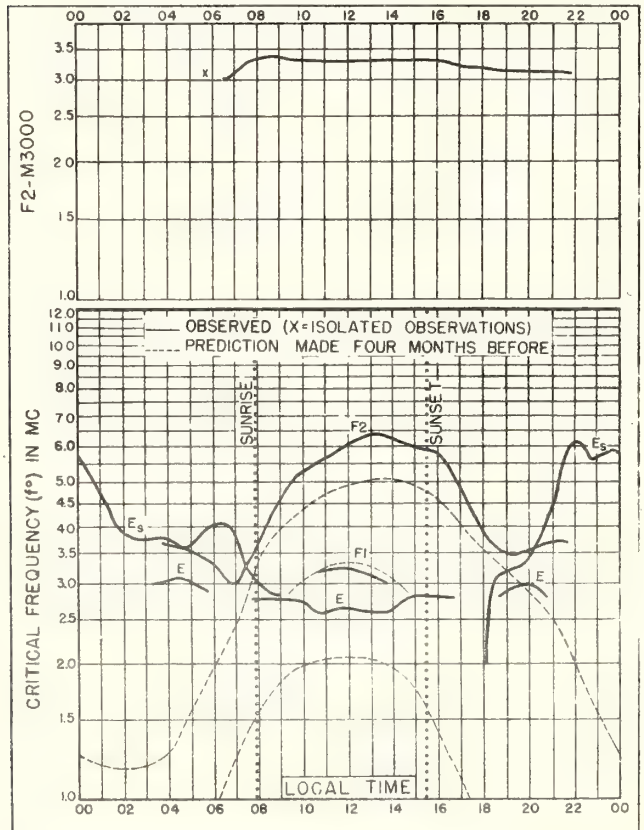


Fig. 11. CHURCHILL, CANADA
58.8°N, 94.2°W NOVEMBER, 1944

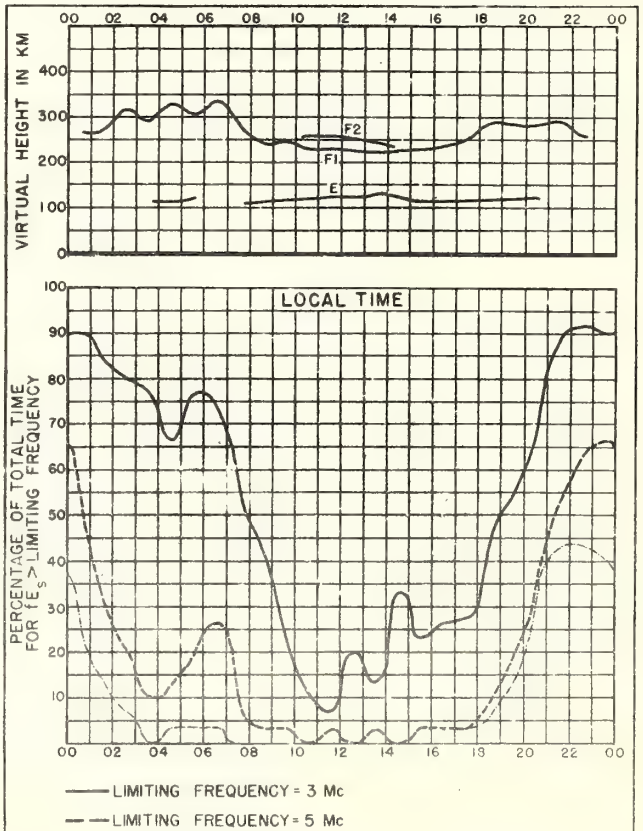


Fig. 12. CHURCHILL, CANADA NOVEMBER, 1944

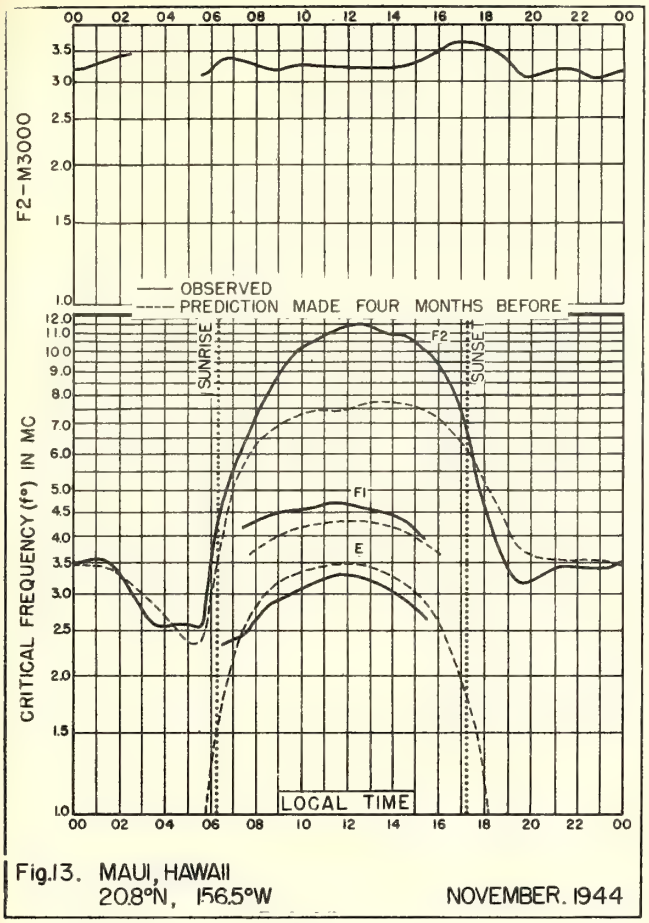


Fig.13. MAUI, HAWAII
20.8°N, 156.5°W
NOVEMBER. 1944

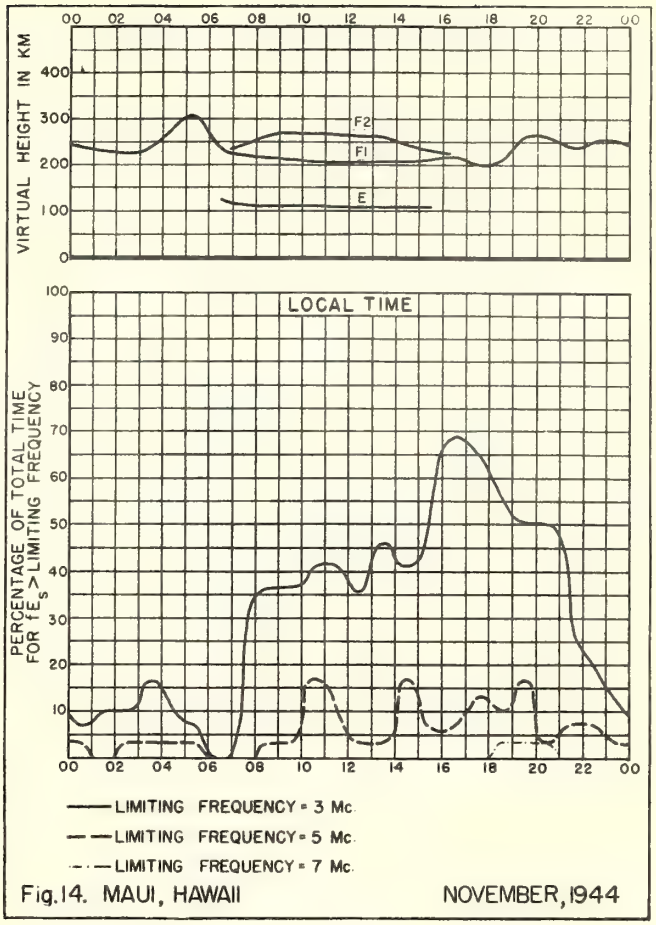


Fig.14. MAUI, HAWAII
NOVEMBER, 1944

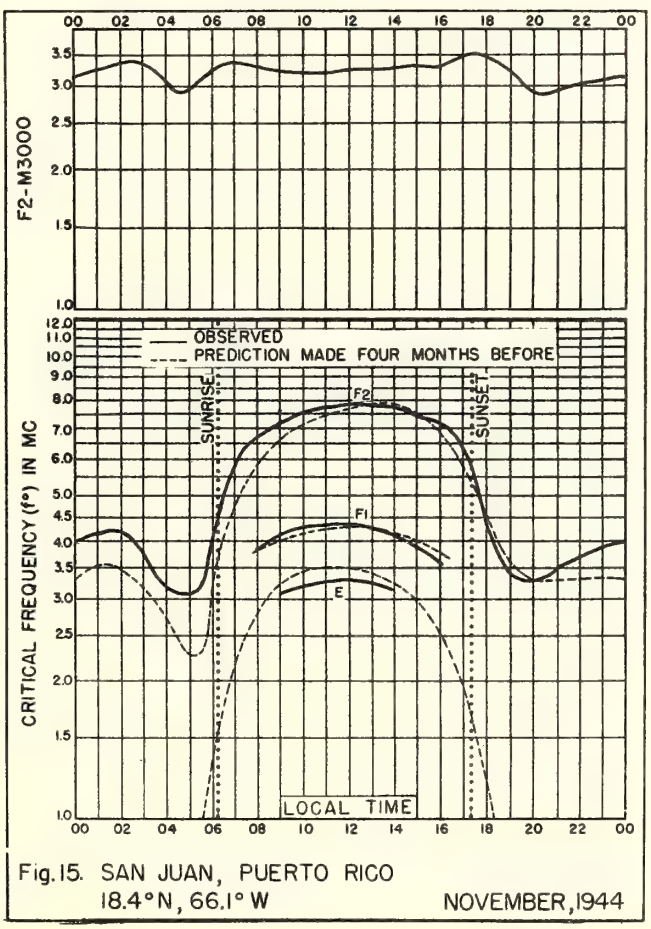


Fig.15. SAN JUAN, PUERTO RICO
18.4°N, 66.1° W
NOVEMBER, 1944

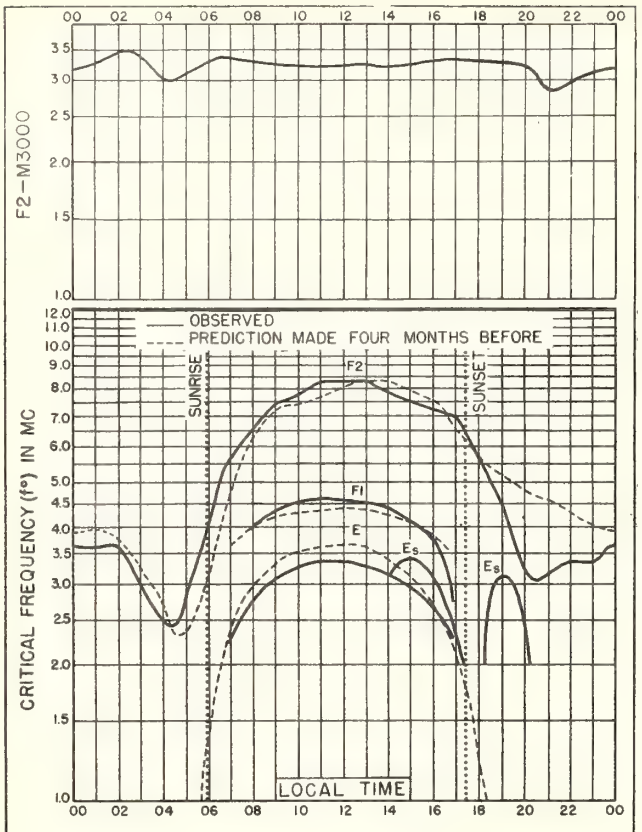


Fig.16. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.3°W NOVEMBER, 1944

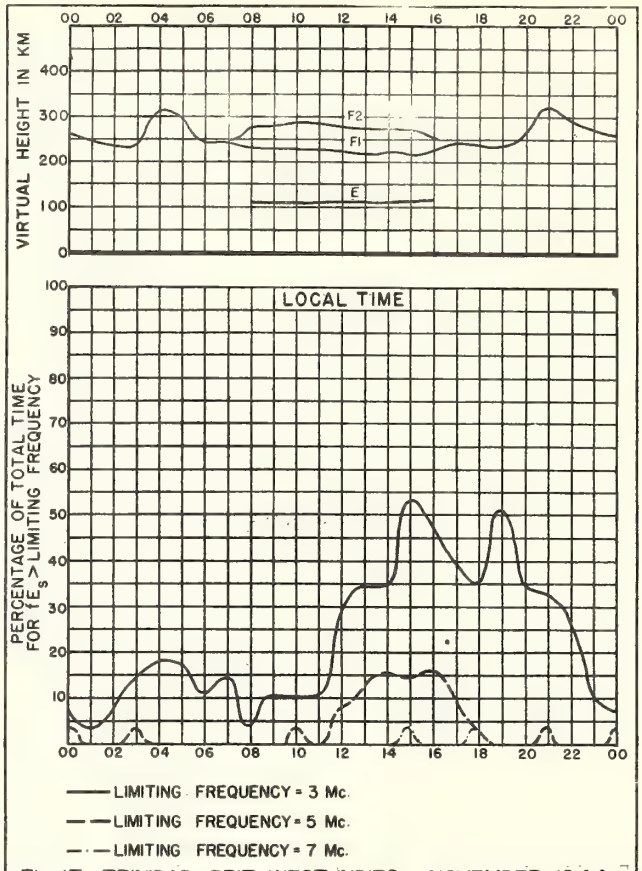


Fig. 17. TRINIDAD, BRIT. WEST INDIES NOVEMBER, 1944

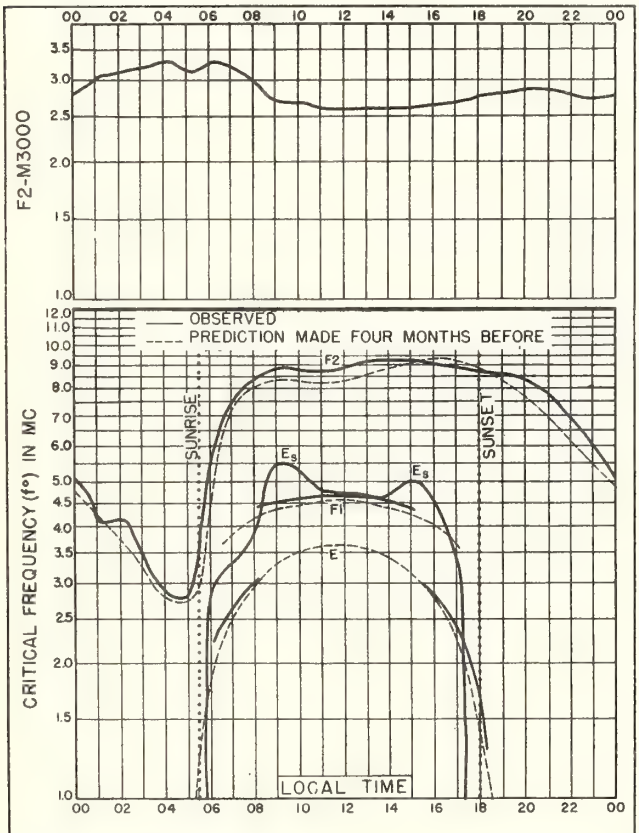


Fig.18. HUANCAYO, PERU
12.0°S, 75.3°W NOVEMBER, 1944

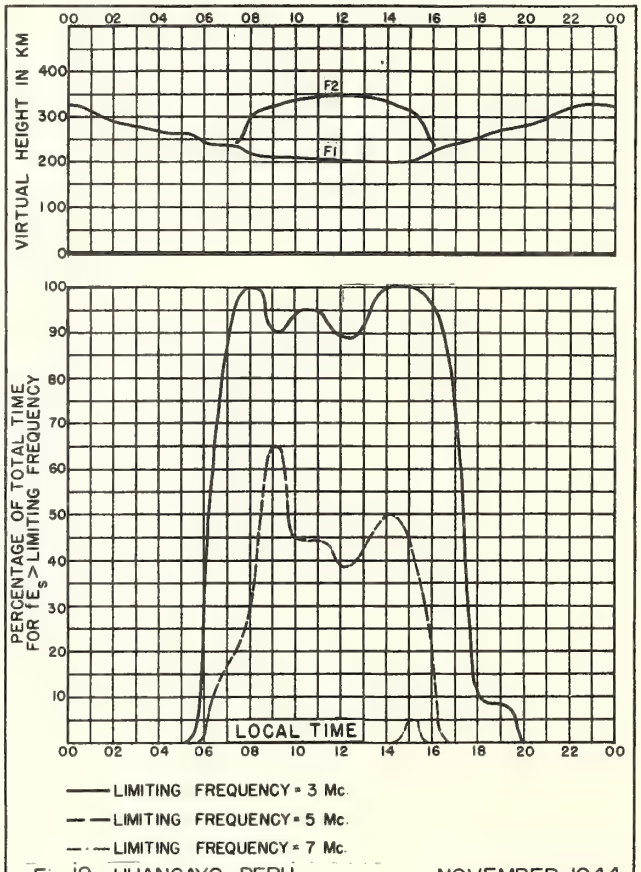


Fig. 19. HUANCAYO, PERU NOVEMBER, 1944

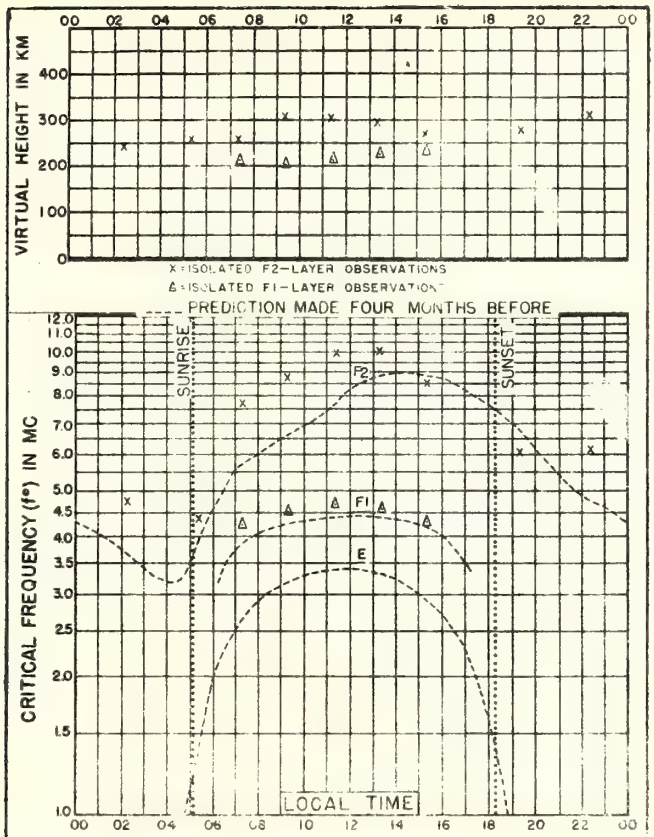


Fig. 20. PITCAIRN IS. 25.0°S, 130.0°W NOVEMBER, 1944

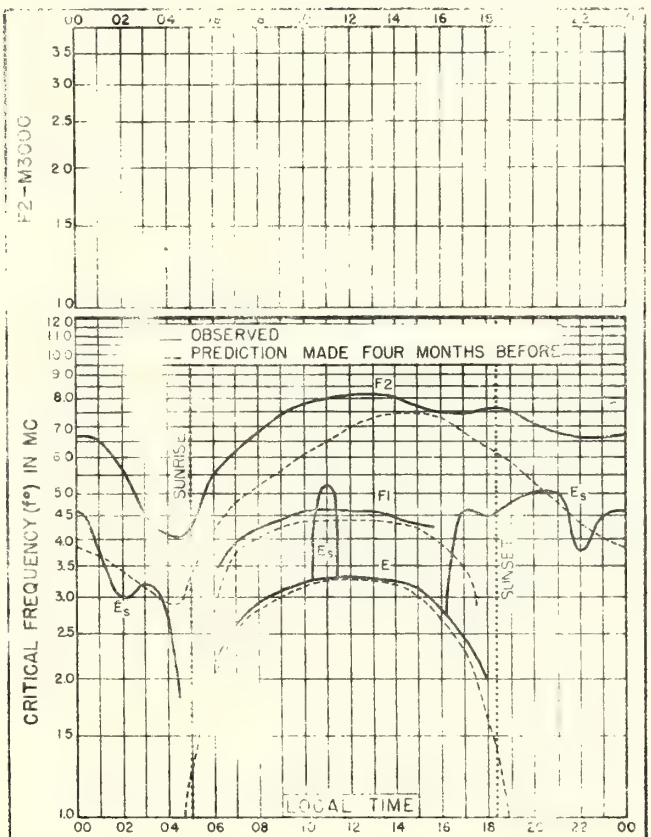


Fig. 21. KERMADEC IS. 29.2°S, 177.9°W NOVEMBER, 1944

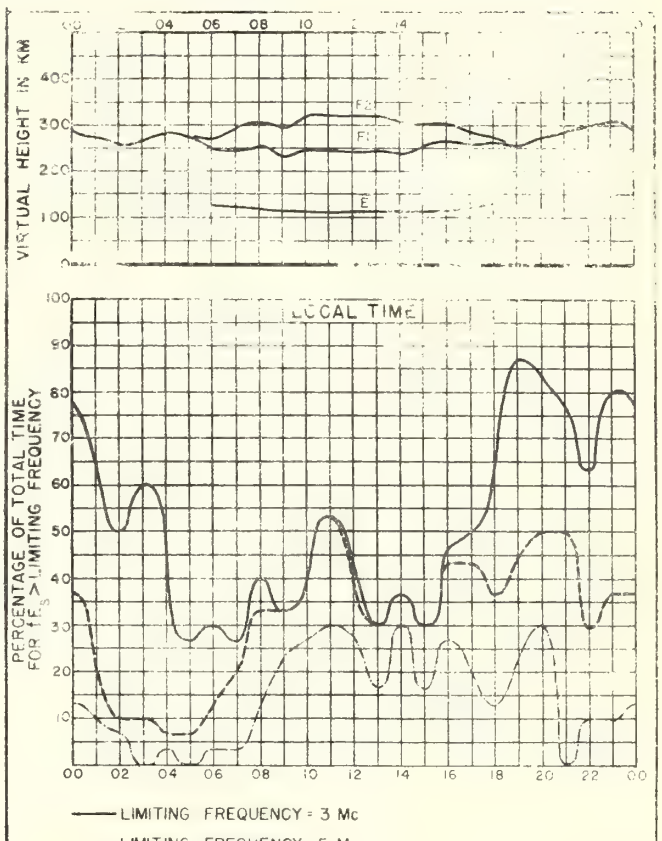


Fig. 22. KERMADEC IS. NOVEMBER, 1944

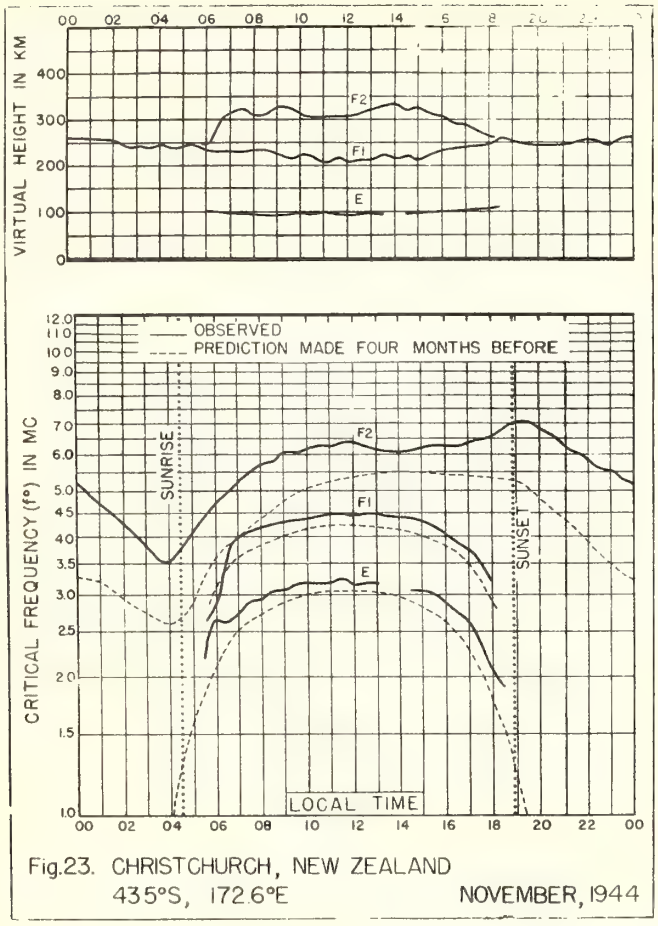


Fig.23. CHRISTCHURCH, NEW ZEALAND
43.5°S, 172.6°E NOVEMBER, 1944

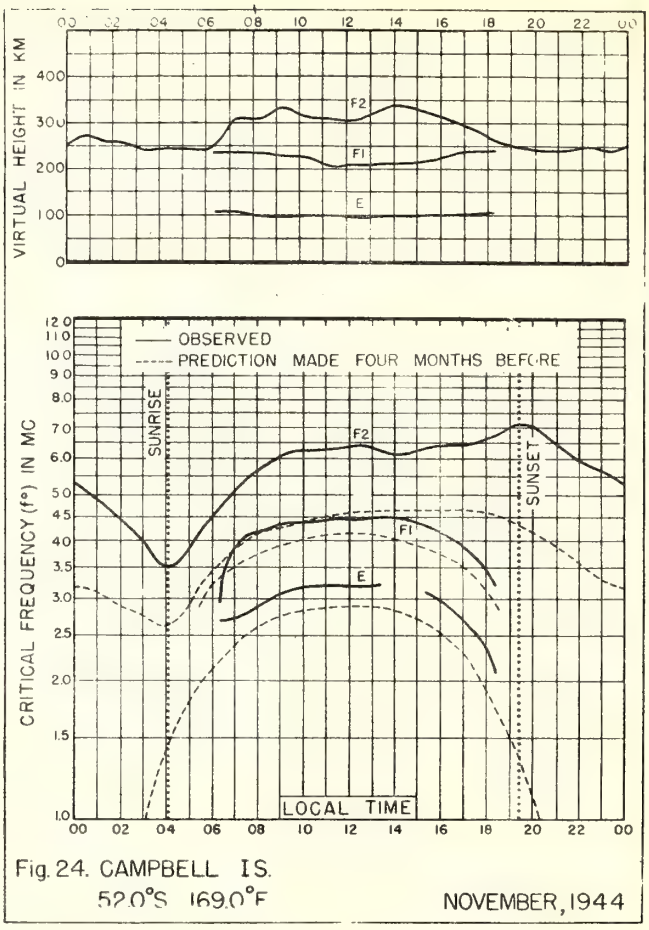


Fig. 24. CAMPBELL IS.
52.0°S 169.0°E NOVEMBER, 1944

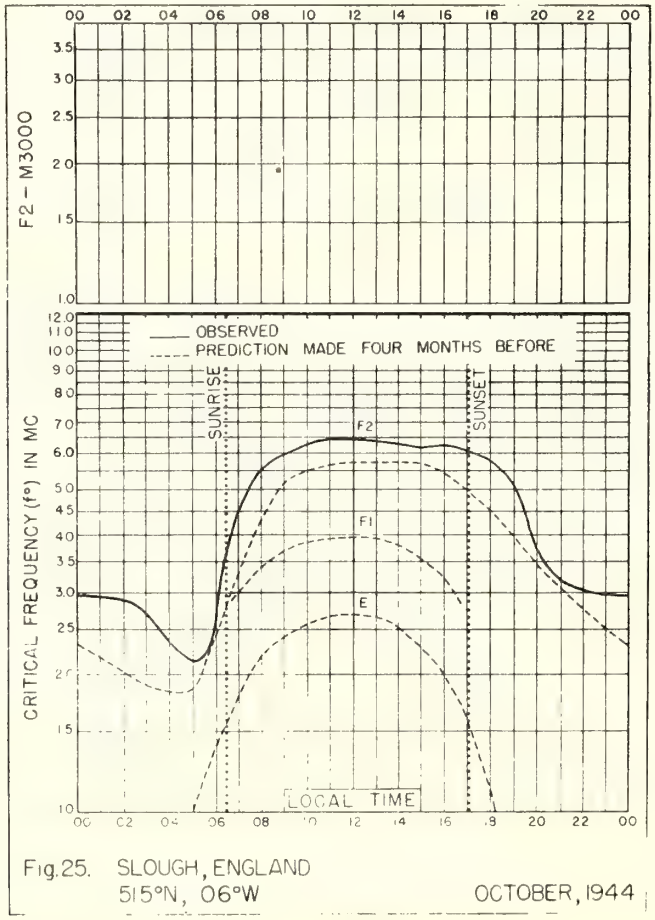


Fig.25. SLOUGH, ENGLAND
51.5°N, 06°W OCTOBER, 1944

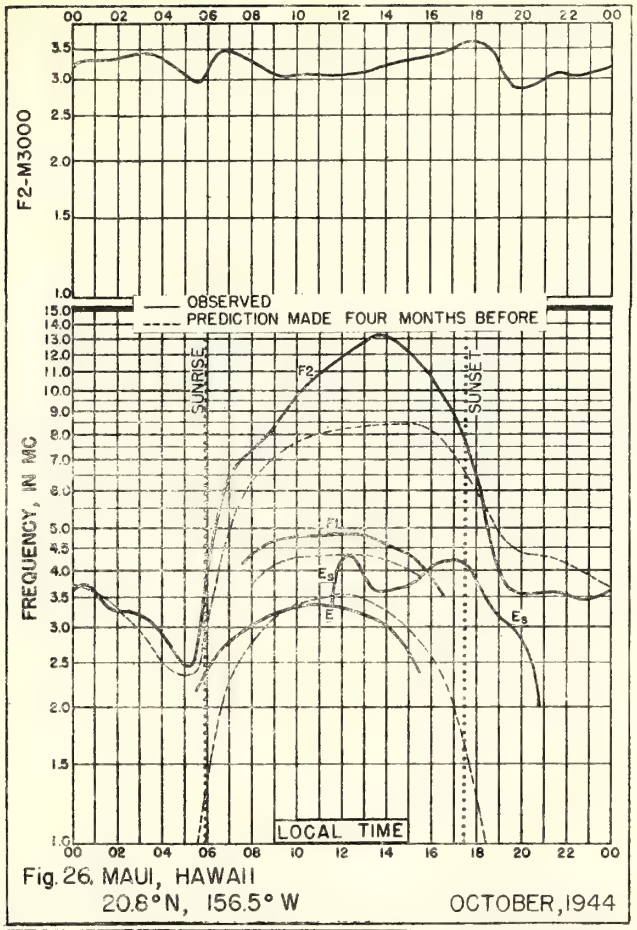


Fig. 26. MAUI, HAWAII
20.8°N, 156.5° W
OCTOBER, 1944

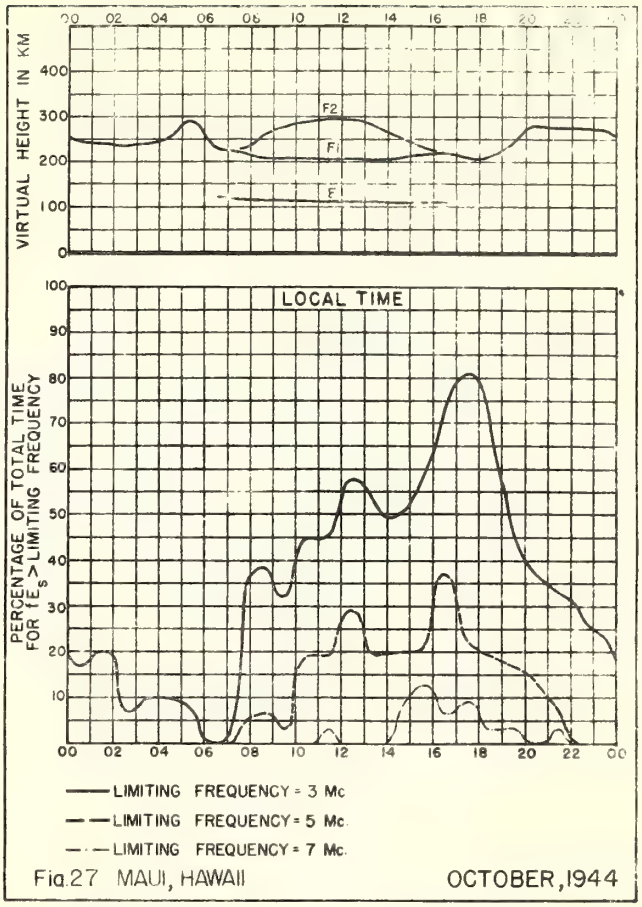


Fig. 27 MAUI, HAWAII
OCTOBER, 1944

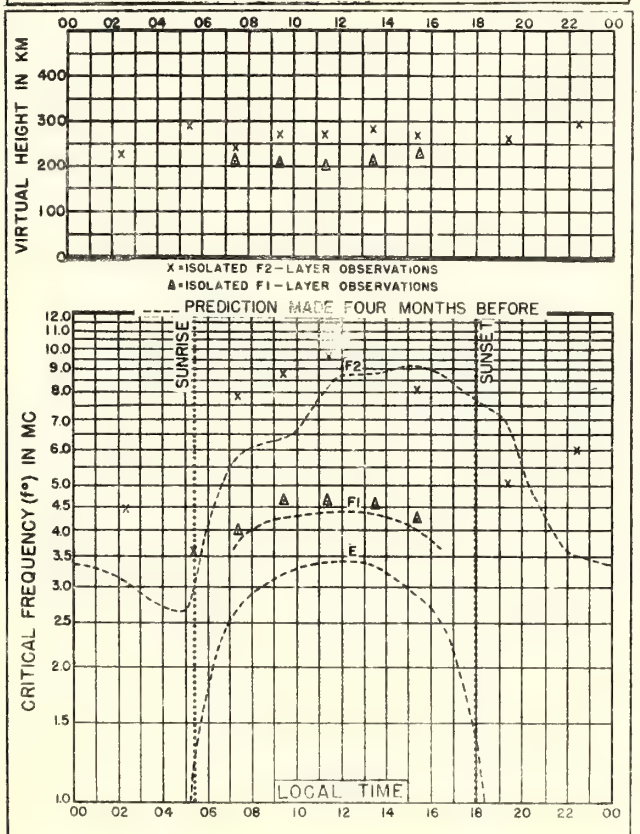


Fig. 28. PITCAIRN IS.
25.0°S, 130.0°W
OCTOBER, 1944

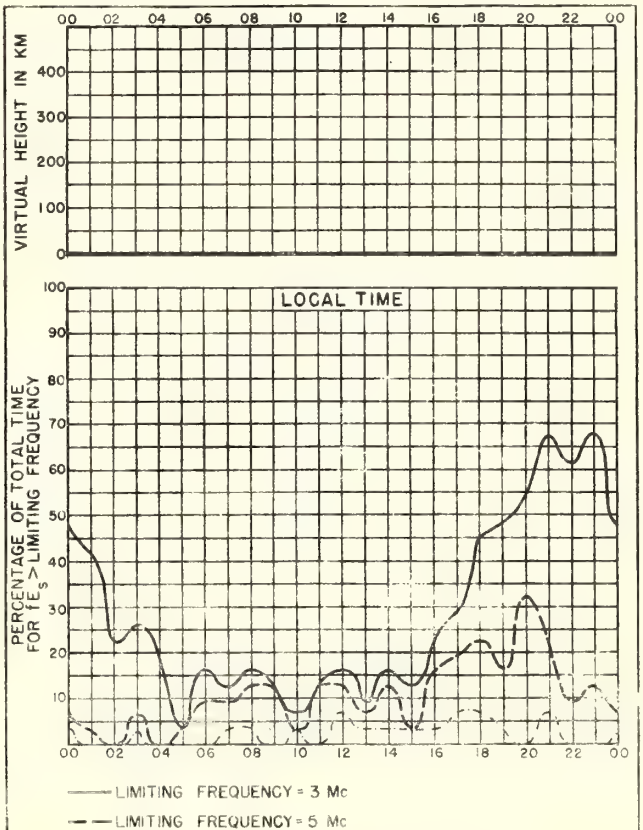


Fig. 29. KERMADEC IS.
OCTOBER, 1944

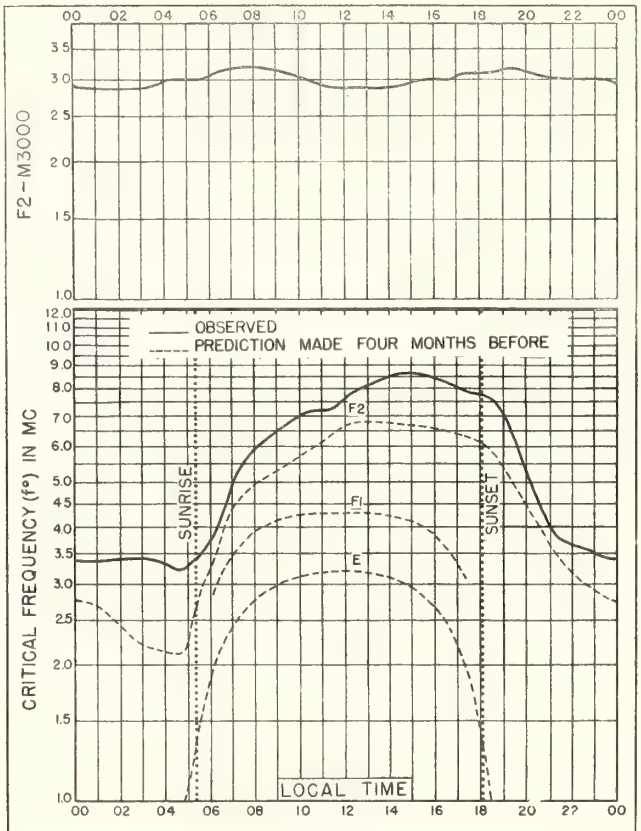


Fig.30. SIMONSTOWN, UNION OF S. AFRICA
33.9°S, 18.7°E
OCTOBER, 1944

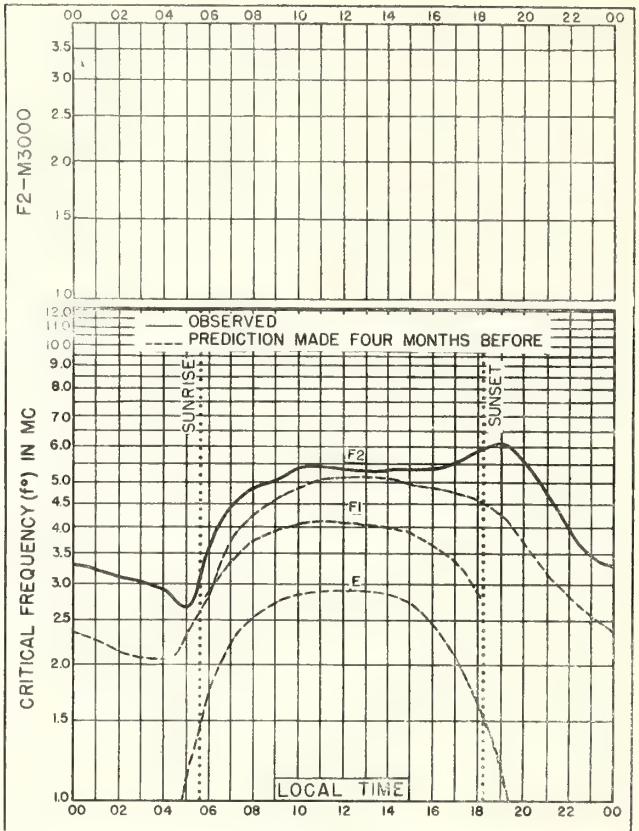


Fig. 31. SLOUGH, ENGLAND
51.5°N, 0.6°W
SEPTEMBER, 1944

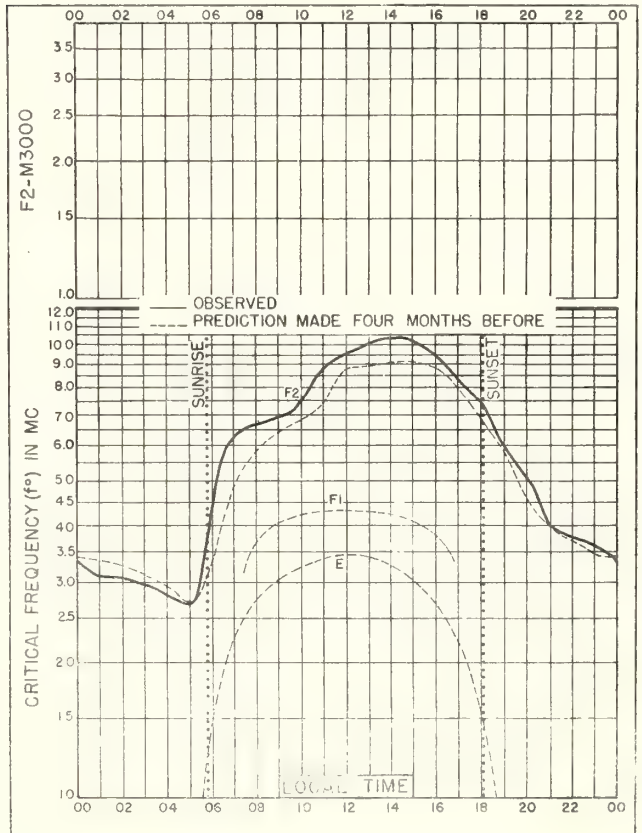


Fig. 32. DELHI, INDIA
28.6°N, 77.2°E
SEPTEMBER, 1944

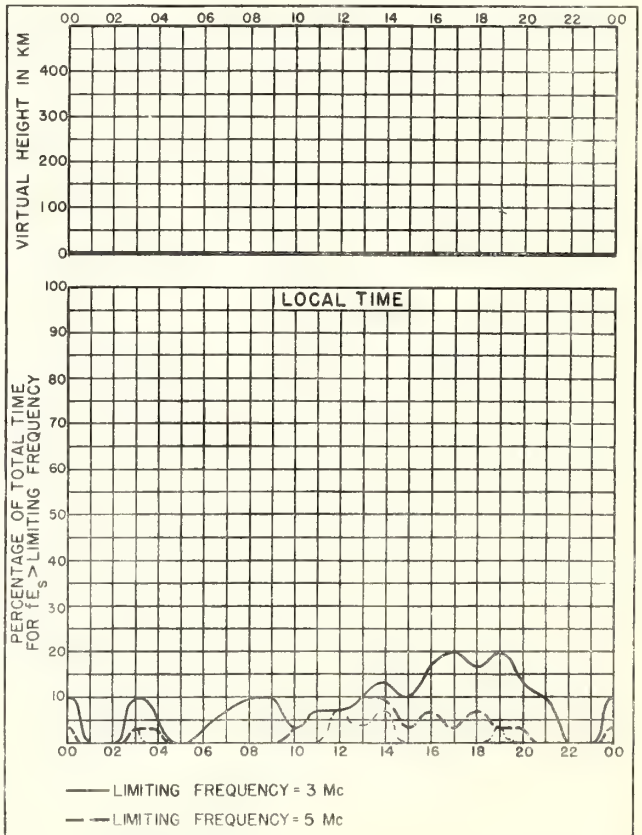


Fig.33. KERMADEC IS.
SEPTEMBER, 1944

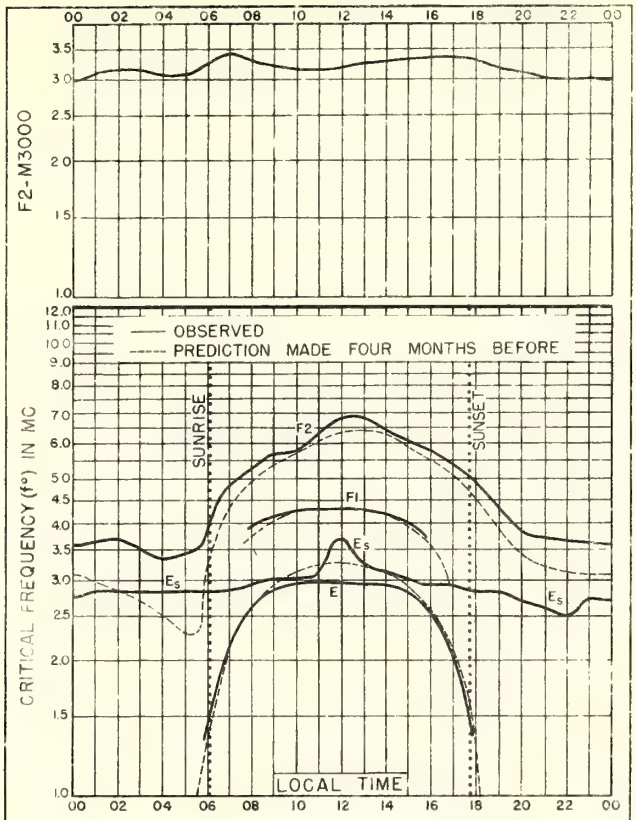


Fig.34. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E SEPTEMBER, 1944

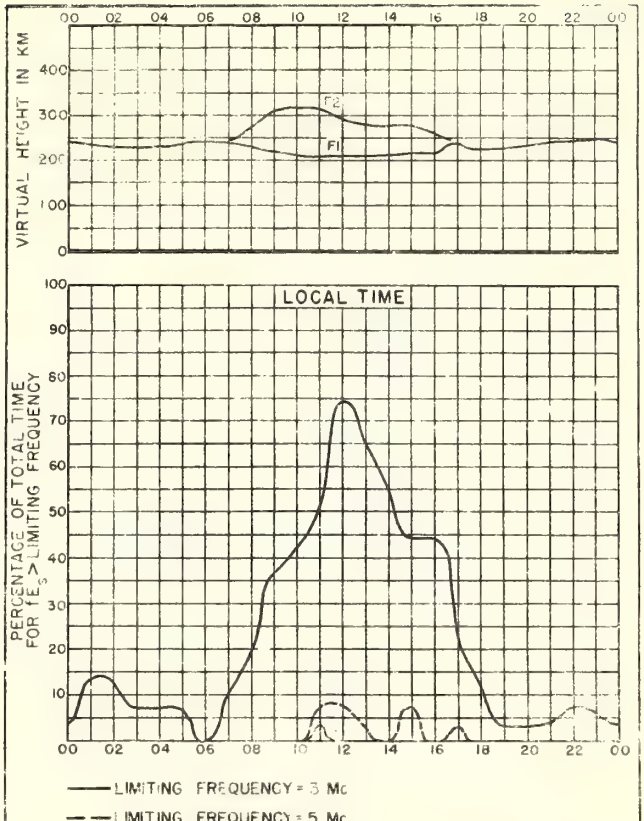


Fig.35. WATHEROO, W. AUSTRALIA SEPTEMBER, 1944

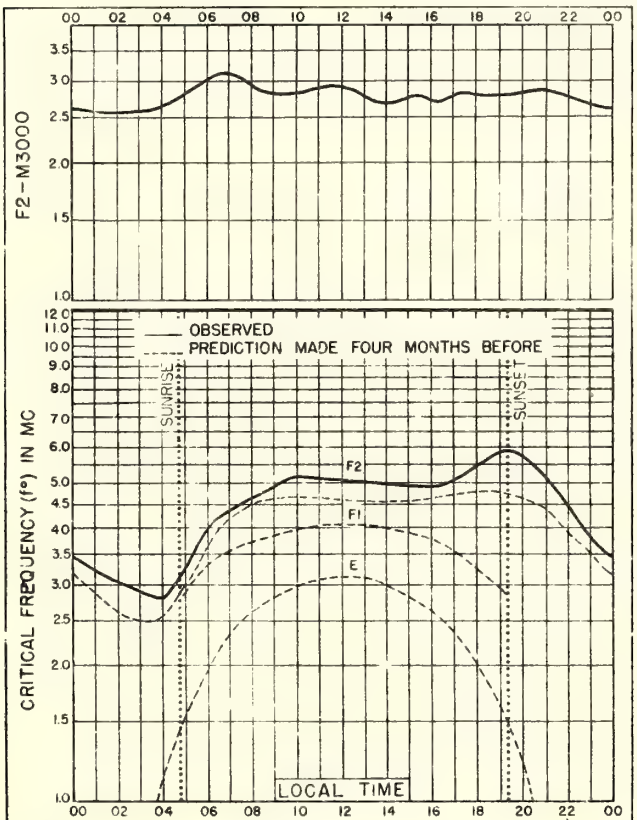


Fig.36. SLOUGH, ENGLAND
51.5°N, 0.6°W AUGUST, 1944

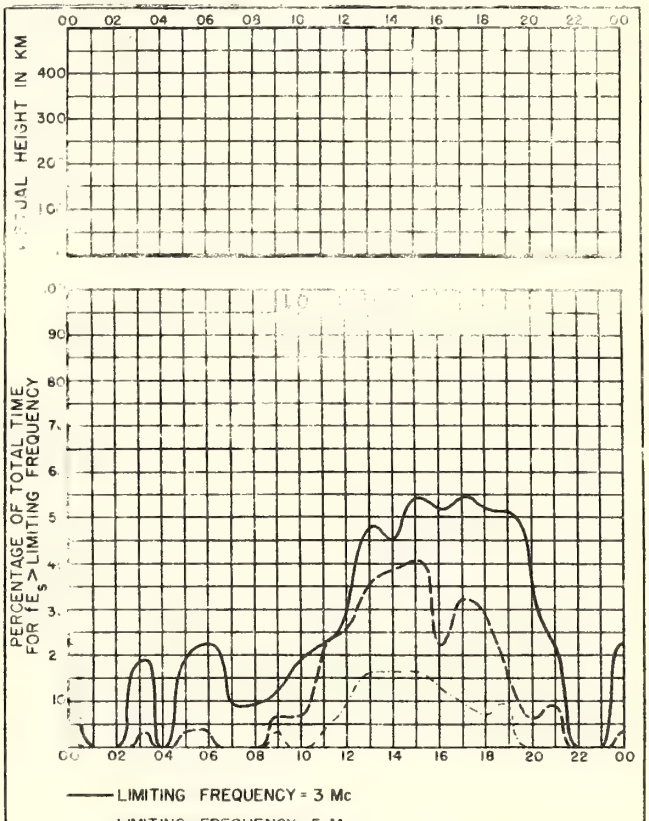


Fig.37. KERMADEC IS. AUGUST, 1944

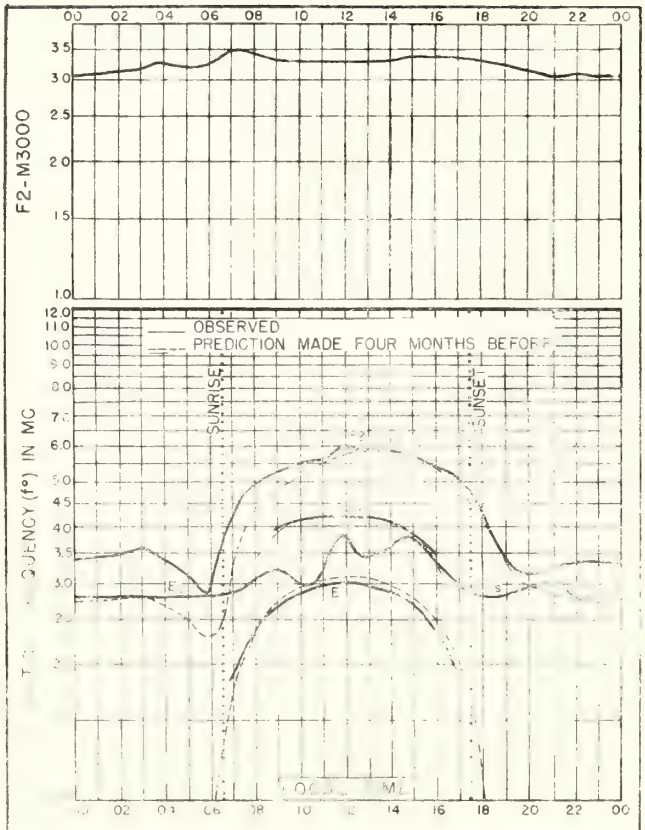
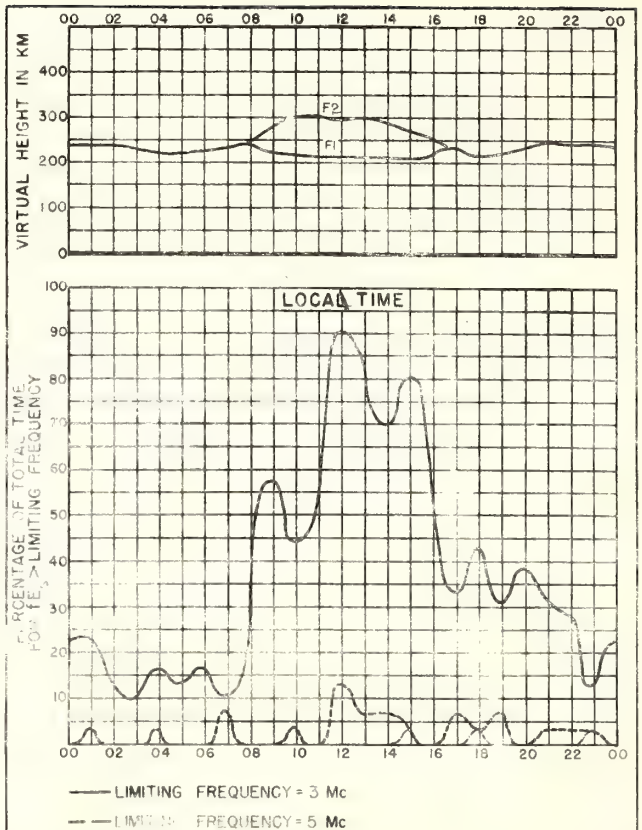


Fig 38. WATHEROO, W AUSTRALIA
30.3°S, 115.9°E

A[illegible]



[illegible] WATHEROO, W AUSTRALIA AUGUST 1944

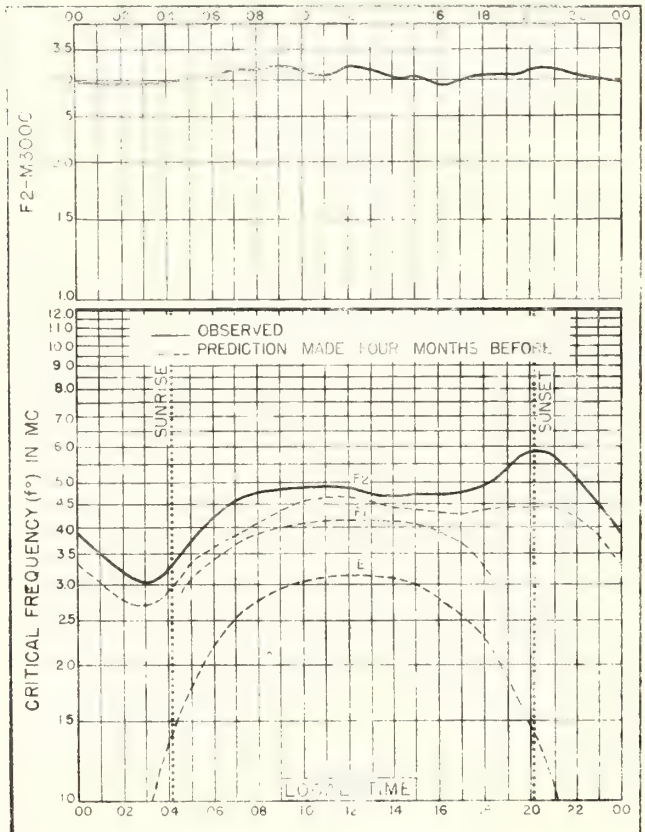


Fig 40 SLOUGH, ENGLAND
51.5°N, 0.6°W

JULY, 1944

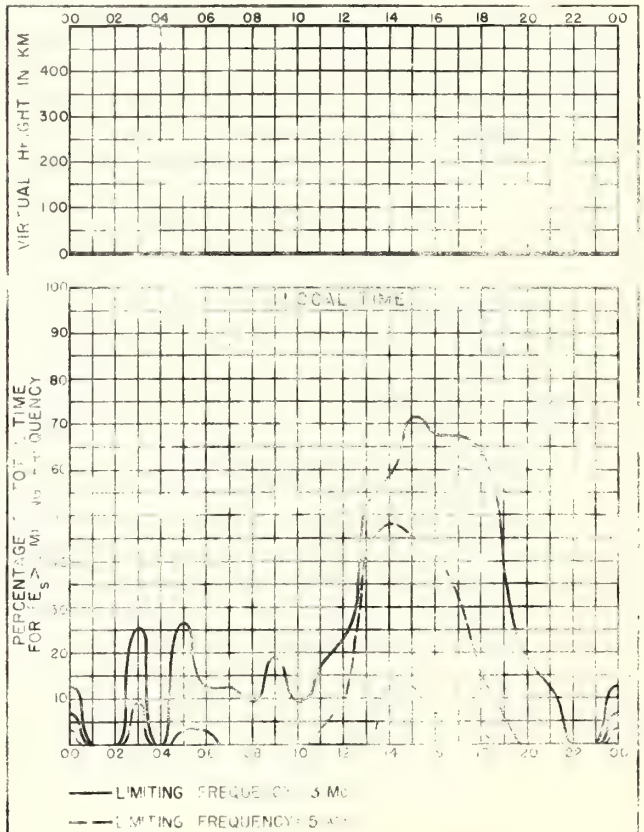


Fig 41. KERMADEC IS

JULY, 1944

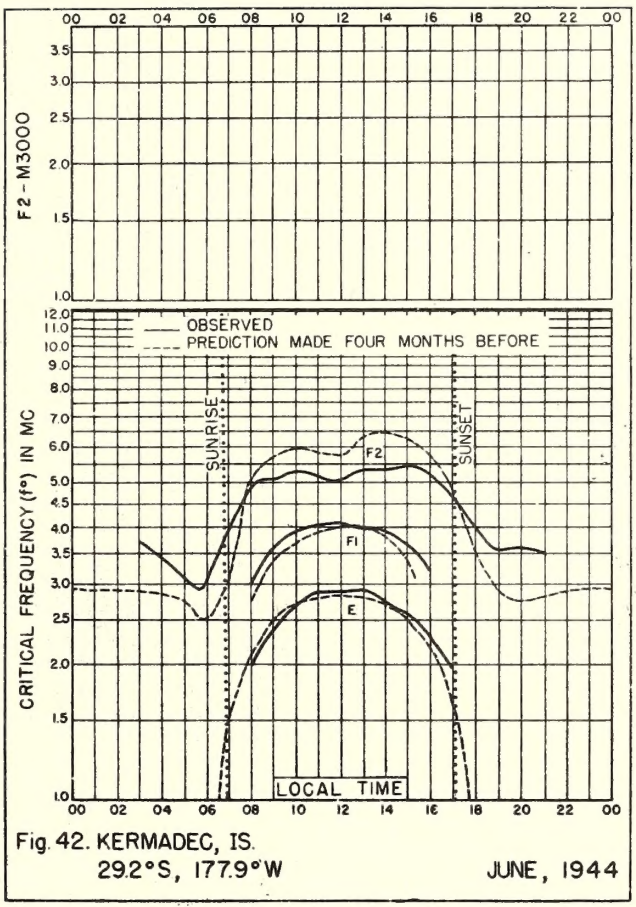


Fig. 42. KERMADEC, IS.
29.2°S, 177.9°W
JUNE, 1944

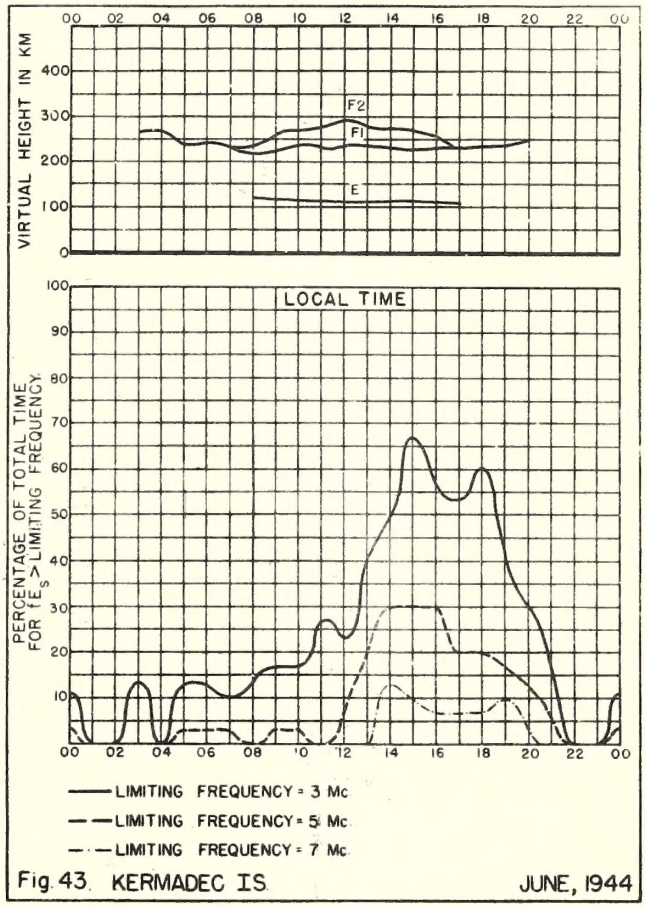


Fig. 43. KERMADEC IS.
JUNE, 1944

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